UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

OCT 31 2016

ACTION MEMORANDUM – RV1

SUBJECT: Confirmation of Verbal Authorization, Request for a Change of Scope, Ceiling Increase and a 12-Month Exemption for the CERCLA Emergency Removal Action at the Wurtsboro Lead Mine Site, Wurtsboro, Sullivan County, New York

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TO: Walter E. Mugdan, Director
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THRU: Joseph D. Rotola, Chief
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Site ID No.: A25U

I. PURPOSE

The purpose of this Action Memorandum is to confirm and document the verbal authorization granted by the Director of the Emergency and Remedial Response Division to initiate an emergency removal action at the Wurtsboro Lead Mine Site ("Site") in Wurtsboro, Sullivan County, New York. This Action Memorandum further requests a change in scope, ceiling increase and 12-month exemption to address the threat of direct contact to lead contaminated soil by the public. On September 23, 2015, the U.S. Environmental Protection Agency ("EPA") On-Scene Coordinator ("OSC") requested and was granted verbal authorization pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA") to initiate an emergency removal action. The total funding, verbally authorized for this action, is $650,000, of which $500,000 is for mitigation contracting. On October 6, 2015, written notification of the verbal authorization was provided to the Division Director. A copy of the notification is included as Attachment A. The emergency removal action was initiated on October 14, 2015 and included the installation of security fencing, consolidating milling wastes, evaluating passive treatment systems for adit water, and evaluation of mitigation options and logistics for managing approximately 10,000 tons of tailings and milling wastes. An additional $200,000 for mitigation contracting is necessary to cover the cost for the activities in the change of scope which includes covering specific areas of the tow path adjacent to the Delaware & Hudson Canal ("D&HC") and capping the milling waste. If approved the new project ceiling will be $850,000, of which $700,000 is for mitigation contracting.

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The Site meets the criteria for a removal action under the CERCLA, 42 U.S.C. §§ 9601-9675, as described in Section 300.415(b) of the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"), 40 C.F.R.
§ 300.415(b).

There are no nationally significant or precedent-setting issues associated with this removal action; however, since this is a mining site, EPA's Office of Emergency Management has been consulted. The communication memo is included as Attachment B.

II. SITE CONDITIONS AND BACKGROUND

The EPA Superfund Management System ("SEMS") Identification Number for the Site is NYN000202035. The proposed removal action is considered time-critical.

The Site encompasses approximately 40 acres and is partially located within the 1,000-acre Wurtsboro Ridge State Forest ("WRSF"). The Site was operated as a lead mine from the 1830s through the 1850s and again during World War I and the early 1960s. Galena (a natural form of lead sulfide) was mined from the mountain at the Site and processed in a milling area at the base of the mountain. Lead from the operations has contaminated the mountain slope below the mine adits, a wetland area in the milling area and the adjacent D&HC.

A. Site Description

1. Removal site evaluation ("RSE")

On September 4, 2015, EPA received a written request from the New York State Department of Environmental Conservation ("NYSDEC") requesting that the conditions at the former Wurtsboro Lead Mine ("WLM") be evaluated for a possible CERCLA emergency removal action. A copy of the request is provided as Attachment C. The mining areas and associated contamination are located within a 40-acre portion of the 1,000-acre WRSF, which the State acquired in 1988. A Site Location Map is included as Figure 1 in Attachment D. Historical documents indicate that mining operations on the property occurred from the 1830s through the 1850s, during World War I and again in the early 1960s. As a result of these operations, large piles of waste tailings and millings were created and remain on-site.

In 2012, NYSDEC initiated soil, sediment and surface water investigations to characterize the Site. In general, soil samples were analyzed utilizing the Toxicity Characteristic Leaching Procedure ("TCLP") and have been found to contain lead concentrations ranging from 5.3 to 268 milligrams per liter ("mg/l"). The EPA hazardous waste regulatory level for lead is 5.0 mg/l. Samples collected from surface soils and canal sediments contained elevated concentrations of up to 44,000 milligrams per kilogram ("mg/kg") of lead and other heavy metals, including antimony, arsenic, cadmium, and zinc. Surface water samples contained lead at concentrations up to 4.8 mg/l. The NYSDEC investigations determined that extensive contamination exists in the areas of the former mining operations.

On September 22 and 23, 2015, EPA met with NYSDEC representatives at the Site to conduct a Site reconnaissance. The reconnaissance focused on visual inspections of the adits, the tailing piles, the milling area, the D&HC and tow path adjacent to the D&HC. During the Site inspection, multiple piles of mining waste were observed, which were estimated by NYSDEC to weigh 10,000 tons. Three large piles of tailings are located midway up the mountain immediately below their respective adits. A fourth pile of tailings is located at the adit at the base of the mountain ("the lower adit"), adjacent to the former Ore Milling Area ("OMA"). The lower adit has a constant discharge of water that flows through the millings into the wetlands. The OMA encompasses approximately one acre of the approximately 20-acre wetlands area located at the lower adit. NYSDEC estimated that there is 4,500 tons of milling waste generated from the former processing operations located at the OMA. Water from the lower adit traverses the milling wastes and discharges into the D&HC. The D&HC is located within the Sullivan County Linear Park. Access from the park is by foot along a former tow path; however, evidence of recreational all-terrain vehicle ("ATV") traffic has been observed. A Site Plan depicting the areas of concern is included as Figure 2 in Attachment D. Photographic documentation of each area of concern is included in Attachment E.

On October 14, 2015, the EPA Removal Action Branch ("RAB") initiated a removal action at the Site. Concurrent with the initiation of the removal action, assessment work began to further characterize and define the limits of contamination within known and suspected areas of contamination.

On October 27, 2015, the OSC mobilized its Emergency and Rapid Response Services ("ERRS") contractor, which provided mining experts to meet with three NYSDEC divisions: the Division of Mineral Resources (New York, Region 3), the Division of Lands and Forests and the Division of Environmental Remediation. During this meeting, EPA presented the planned activities for the removal action, which included stabilization of existing roadways, tree/brush clearing, installation of security fencing, soil and surface water sampling, D&HC sediment excavation and discussions on logistics for the removal/disposal of tailing and milling wastes.

On October 30, 2015, EPA obtained written access to all portions of the Site, including portions in the State-owned WRSF, the County-owned Linear Park and areas owned by others. Figure 3 in Attachment D shows the location and ownership of each parcel involved. Prior to receiving written access to the Site, EPA conducted non-intrusive activities under the written access provided by New York State through NYSDEC.

On November 9 and 10, 2015, EPA mobilized its Removal Support Team 3 ("RST3") contractor to conduct sampling activities to supplement investigations previously conducted by NYSDEC in the areas of concern at the Site. EPA's investigations focused on the OMA, wetlands, upper mines, and towpath/lower road. The intent of the sampling effort was to define the extent of the contamination in each area of concern, determine the Resource Conservation and Recovery Act ("RCRA") classification of the material(s) and assess the quality of water flowing from the OMA adit. These investigations are on-going. The areas of concern and the sampling activities performed at the Site include:

(1) Ore Milling Area

Thirty-six test pits were excavated and soil samples were collected to define the horizontal/vertical extent of waste millings. Sample locations were established on a 30-foot center grid basis. The test pit sampling event resulted in the collection of 95 soil samples to a maximum depth of 6.5 feet below ground surface ("bgs"). The location of each sampling point and the corresponding sample results are illustrated on Figure 4 in Attachment D. Total lead concentrations within the OMA range from 4.6 mg/kg to 5,000 mg/kg. The waste was determined to be hazardous. A tabulated summary of the results is provided on Table 1 in Appendix 1.

(2) Wetland Areas

Initially, 55 surface and subsurface soil samples were collected from 17 locations. The location of each sampling point and the corresponding sample results are illustrated on Figure 4 in Attachment D. The sampling event was expanded to include the entire wetland area (approximately 20 acres), because the horizontal extent was not defined during the initial sampling. From November 30 through December 16, 2015, 624 soil samples were collected from 215 sampling grid locations within the wetland area. Sampling grids were on 50-foot centers within the estimated 20-acre wetlands. The location of each sampling point and corresponding sampling results are illustrated on Figures 5, 5A, 5B, 5C, and 5D in Attachment D. Total lead concentrations within the wetlands range from 8 mg/kg to 49,000 mg/kg. Four soil samples were collected from the area for waste characterization purposes. Two of the samples were determined to be hazardous, and two were determined to be non-hazardous. A tabulated summary of the results is provided on Table 2A and 2B in Appendix 1.

(3) Upper Mines/Tailings

A total of 108 surface soil samples were collected of the native soil along the perimeter of each of the three upper mine tailing piles. The initial sampling event occurred in November 2015. In March 2016, additional sampling was conducted to further delineate contamination. The location of each sampling point and sampling results from both sampling events are illustrated on Figure 6 in Attachment D. As part of the November 2015 sampling event, four samples were collected of the tailings for waste characterization purposes. The analysis determined that all four samples were hazardous.

During this sampling event a previously unidentified mine was discovered approximately 250 feet south-southeast of Mine 1. This mine was identified as Mine 5. Tailings are present below the vertical mine shaft. Analysis of the samples identified total lead at concentrations ranging from 710 mg/kg to 22,000 mg/kg. TCLP analysis identified lead at concentrations that ranged between 40 mg/l and 180 mg/l. A summary of these results is provided on Table 3A and 3B in Appendix 1.

On June 27, 2016, NYSDEC notified EPA that a sixth vertical mine shaft was identified during the review of historical records, which was confirmed during a subsequent Site

inspection. This mine shaft is located approximately 500 feet northwest of the upper mine complex. NYSDEC requested that EPA assess this potential area of concern.

(4) Drainage Pathways from the Upper Mines

Two drainage pathways originate from the upper mines and discharge to the wetland area located at the base of the mountain. The pathways are identified on Figure 2 in Attachment D. The north and south drainage pathways are approximately 1,900 and 1,500 linear feet in length, respectively. NYSDEC has conducted several soil/sediment sampling events within each of the pathways and confirmed the presence of total lead at concentrations ranging from 364 mg/kg to 12,072 mg/kg. EPA has not assessed the areas as of this writing.

(5) Surface Water

To characterize surface and mine discharge water, samples were collected of adit water, wetlands water and mountainside surficial runoff. The location of each surface water sampling point and corresponding sampling results are indicated on Figure 7 in Attachment D. Each of the water samples were found to contain concentrations of lead, ranging from 0.008 mg/l to 5.1 mg/l. NYSDEC surface water criteria is .025mg/l and the maximum contaminant level ("MCL") for drinking water is .005mg/l. A tabulated summary of the results is provided on Table 4 in Appendix 1.

(6) Towpath/Lower Railroad Bed

Samples from the tow path and lower railroad bed were collected between May 16 and May 19, 2016. These areas are utilized as hiking trails by the public. A total of 252 samples were collected from 120 locations at the 0- to 2-inch and 6- to 12-inch increments. Figure 8 in Attachment D illustrates the location of each sampling point and total lead concentrations greater than 400 mg/kg. In general, lead was identified at concentrations above 400 mg/kg at the extreme north and south areas of the tow path and lower rail road bed and where the runoff from the OMA enters into the D&HC. The towpath has concentrations ranging from 7.3mg/kg to 6,100mg/kg; the lower railroad bed has concentrations ranging from 15 mg/kg to 44,000 mg/kg. The contamination in these areas is attributable to surface water from the pathways discussed above, as well as from the water draining through the OMA to the D&HC. A tabulated summary of these results is provided on Table 5 in Appendix 1.

Waste Characterization

A total of eleven composite samples were collected for TCLP analysis from the areas of concern. Three samples were collected from the OMA waste, four samples were collected from the upper adit tailings and four samples were collected from the wetlands soils. Nine of these samples contained lead at concentrations greater than the RCRA regulatory level 5.0 mg/l. Lead concentrations in the upper adit tailings contained lead at concentrations ranging from 40 mg/l to 180 mg/l, lead concentrations in the OMA ranged

from 31 mg/l to 130 mg/l, lead in the wetland area was identified in two samples both at a concentration of 8 mg/l. Two samples collected from the wetlands were below the 5.0 mg/l threshold. A tabulated summary of the results is provided on Table 6 in Appendix 1.

Summary

Extensive lead contamination has been documented in soils, tailings, and millings at the Site at concentrations above the Removal Management Level for residential soil (400mg/kg). Surface water is contaminated with lead at concentrations above the MCL (.005mg/l) for drinking water. Results of TCLP analysis confirmed that the millings, tailings and portions of wetland soil/sediments exhibit the characteristic of toxicity for lead and are required to be identified with an EPA Hazardous Waste Number of D008.

Based on the assessment sampling activities, the areas of concern have been generally delineated both horizontally and vertically. It is estimated that approximately 128,000 tons of lead-contaminated material (tailings, millings, soil/sediments) are present on-site. The amount of lead contaminated material in each sampled area of concern is as follows: OMA – 10,000 tons, Wetlands – 100,000 tons, Upper Mines/Tailings – 8,000 tons, Drainage Pathways – 6,500 tons and Tow Path/Lower Railroad Bed – 3,500 tons. The waste materials identified on the Site have been determined to be significantly greater than what was previously reported.

Due to the size and complexity of the impacted areas at the Site, the action proposed in this action memorandum will first focus on the areas that present the greatest threat to public health and the environment. These areas have been identified as the OMA, the lower rail road and the D&HC towpath and peninsula within the Sullivan County Linear Park.

2. Physical location

The Site is located in Mamakating, Sullivan County, New York (coordinates Lat. 41.5939040, Long. -74.4444719) and includes portions of the 1,000-acre WRSF. The tax parcels that comprise the Site include Section 26, Block 1, Lots 6, 7.2, 8, & 10, and Section 21, Block 1, Lots 2, 3.2, 3.3, 4.1, 4.2, 5 and 7. The Site may be accessed by way of former railroad beds from Ferguson Road to the north and VFW Road to the south. Site elevation ranges from 550 to 1,300 feet above mean sea level. A Site Location Map is included as Figure 1 in Attachment D. Both points of access consist of gravel-covered abandoned railroad beds, formerly used by the New York, Ontario and Western Railway's Port Jervis to Kingston Branch. The upper railroad bed and lower railroad bed are approximately 2.4 miles and 3.2 miles in length, respectively. The entire property is mountainous, heavily wooded and used primarily for recreational purposes.

A Site map depicting the areas of concern is included as Figure 2 in Attachment D. Surrounding land use consists of residential and commercial properties. The closest residence is located approximately 1,650 feet east of the upper mines at the Site. There are approximately 350 residents that live within one mile of the Site. The closest school is

the Emma C. Chase Elementary School in the Town of Wurtsboro and is located 2.3 miles southwest of the Site.

Millings in the OMA are immediately adjacent to the Linear Park, which is heavily used by the public. There is evidence of target shooting, camp fires, hunting and ATV usage in this area. Tailings from the adit are present in large stockpiles below the entrances to the mines. Tailings have spilled onto many of the trails in the park. In addition, migration of waste material into the adjacent wetlands and the D&HC has been documented.

Consultation with the U.S. Fish and Wildlife Service ("USFWS") will be conducted to ensure any actions will be in compliance with Section 7 of the Endangered Species Act. On January 7, 2016, NYSDEC conducted a bat survey within the adits at the Site. During that survey, brown bats and tri-colored bats were observed within the adits. There are species of concern within the Site boundaries, both to USFWS and NYSDEC. However, it has not been determined whether or not federally-listed or proposed threatened or endangered species are present. There is important habitat at the Site, including but not limited to the cave complexes, which draw wildlife to the area. Based upon the existing analytical information, there is an active release of heavy metals from the Site at concentrations that would expect to result in ecological risks to wildlife.

According to the results of a Phase 1A Cultural Resource Survey ("CRS") prepared in October 2013 (Attachment E), the Site area is sensitive for the presence of prehistoric and historic resources. The CRS recommended a Phase 1B CRS for approximately 16-acres of the Site. A portion of this work is on-going. It is likely that additional CRSs will be needed to fully assess the impact of this project on historic resources. Further, to ensure compliance with the tenets of Section 106 of the National Historic Preservation Act, consultation with the New York State Historic Preservation Office and Advisory Council on Historic Preservation was initiated on February 25, 2016.

The wetlands portion of the Site are included in the National Wetlands Inventory. However, the jurisdictional wetlands have yet to be delineated by U.S. Fish and Wildlife Service.

3. Site characteristics

Mining activities at the Site began nearly 200 years ago when Native American Indians of the Delaware Munsee (Lenape) tribe mined lead for their use and to trade. The current use of the Site is recreational in nature (hunting, target shooting, hiking, camping, bike riding, ATV riding, etc.). Access to the Site is via abandoned railroad beds to the east and hiking trails to the west. No intact structures exist on the property.

The portion of the Site located in the WRSF is owned and managed by the State of New York. Sullivan County owns and manages the portions of the Site in the D&HC and the associated Linear Park. Neither the State nor County operated the lead mine. There are no public/private utilities on the property.

This is the first removal action undertaken by EPA at the Site.

4. Release or threatened release into the environment of a hazardous substance or pollutant or contaminant

Sampling and analysis conducted at the Site by EPA have identified CERCLA hazardous substance(s), as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), and listed in 40 C.F.R. Table 302.4. The Site is a facility within the meaning of Section 101(9) of CERCLA, 42 U.S.C. § 9601(9), and the presence of hazardous substances in the soil/sediment and surface water at the Site constitutes a "release," as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

Sampling of mine tailings, millings, soil/sediment and surface water identified lead in elevated concentrations. Total lead concentrations detected in these materials (solids) ranged from 4.1 to 49,000 mg/kg. Surface water draining from the upland area to the wetland area at the base of the mountain is transporting lead contaminated materials into a wetland area and through popular recreational areas along the D&HC.

It is estimated that 78,000 tons of RCRA hazardous waste and 50,000 tons of non-RCRA hazardous waste is at the Site in the tailings, millings and soil/sediment.

The hazardous substances listed below are present at the Site.

Compound	**Statutory Source for a Hazardous Substance**		
	307(a)CWA*	112 CAA**	3001 RCRA***
Lead	X		X
Antimony	X		
Arsenic	X	X	
Cadmium	X		
Zinc	X		

* Clean Water Act Section 307(a)
** Clean Air Act Section 112
***RCRA Section 3001

Rainfall, snow melt, wind and ATV traffic all contribute to the continued migration and release of contamination to the environment (i.e. wetlands, surface water bodies, groundwater and air). Potential routes of exposure to the contaminants include dermal contact, inhalation and ingestion.

Conditions at the Site meet the requirements of Section 300.415(b) of the NCP for the undertaking of a CERCLA removal action.

5. National Priorities List ("NPL") Status

The Site is not currently listed on the NPL.

6. Maps, pictures and other graphic representations

Site figures are included as Attachment D. Photographs documenting Site features are included as Attachment F to this Action Memorandum.

B. Other Actions to Date

1. Previous actions

No previous actions have been taken at the Site by EPA or any other federal or local entity to address the lead contamination on the Site. NYSDEC actions to date have focused on community outreach, posting signs and conducting assessment activities.

2. Current actions

On October 14, 2015, EPA began assessment activities at the Site to characterize wastes in areas of environmental concern identified by NYSDEC in its September 4, 2015 referral. The focus of EPA's efforts were to identify the media(s) of concern (surface water, groundwater, tailings, millings, soil/sediments), define the limits of contamination (vertical/horizontal) for the respective media and determine the hazardous/non-hazardous characteristics of the media. The details and findings of the assessment work, which was completed on May 15, 2016, are discussed in Section II.A.1.

Simultaneous with the assessment work, EPA initiated an emergency removal action at the Site to address immediate public health concerns relating to direct contact with lead. Removal activities began on October 27, 2015, following verbal authorization by the Division Director on September 23, 2015 to take an emergency action. Work covered under the emergency removal action included the following:

- Consolidation of wastes in the milling area;
- Installation of security fencing and signage;
- Evaluation/stabilization of entrance roads;
- Pre-classification of wastes;
- Preparation of work plans to remove lead-contaminated wastes; and
- Pilot tests on passive treatment systems designed to reduce lead concentrations in surface water discharges.

The work noted above was completed on August 8, 2016. However, additional removal work is necessary at the Site to further safeguard the public from the threat of direct contact to lead. EPA's assessment identified lead contamination in surface soil at two isolated areas of the tow path and in three areas on the lower railroad bed. These areas have become contaminated from surface water draining from the mountainside through contaminated tailings.

Additionally, following discussions with NYSDEC on the extent of contamination in the OMA, it was determined that a protective cap over the area was needed to prevent direct contact and surface migration of lead-contaminated particulates into the adjacent

wetlands and D&HC. As noted earlier, the contamination on the tow path and railroad bed was not known at the time of the verbal authorization. The decision to cap the OMA was made recently following discussions with NYSDEC. Both actions are proposed as a change in scope of work and, as such, are included in this memorandum.

C. State and Local Authorities' Roles

1. State and local actions to date

In September 1988, the State of New York acquired the WRSF property. It is the policy of NYSDEC to manage State lands for multiple uses to serve the People of New York State. A Unit Management Plan ("UMP") is the first step in carrying out that policy. In the course of developing the UMP for the WRSF, it was determined that the potential for lead impacts required the evaluation of the entire property.

Starting in August 2012, several rounds of field investigations were conducted by NYSDEC. These investigations were conducted in August and November 2012; April, June, and July 2013; and throughout the fall of 2015. During each of these investigations, elevated concentrations of lead were identified within the soil/sediment, tailings and surface water.

In November 2012, the NYSDEC issued a Fact Sheet regarding the environmental issues within the WRSF. By way of this Fact Sheet, NYSDEC, in conjunction with the New York State Department of Health ("NYSDOH"), informed the public, including user groups of the State Forest and other stakeholders, of the restricted areas at the WRSF and of the health precautions that should be taken when using the unrestricted portions of the WRSF. The Fact Sheet stated that:

- No one should enter the posted restricted areas, including children and pets;
- Users of the unrestricted portions of the property should not drink or filter and drink any surface water they encounter in the vicinity of the mined areas;
- Users of the unrestricted portions of the property should make sure to wash their hands and the hands of children thoroughly with uncontaminated water before eating, drinking or smoking during and after a visit to the property, and shoes/boots and pets should be thoroughly cleaned prior to bringing them indoors; and
- High levels of lead can accumulate in wildlife, including in the meat, organs and bones of deer and other game.

The Fact Sheet also indicated that NYSDEC had advised Sullivan County of the need for restricting public access to a small affected area in and adjacent to the D&HC, along the Linear Park, and would work with the County to post warning signs. A copy of the Fact Sheet is provided as Attachment G.

On November 10, 2015, representatives from NYSDEC and NYSDOH met with residents living on Moore Lane and McDonald Road in the town of Wurtsboro to request access to sample their drinking well water. Each of the four residences are located down gradient of known areas of heavy metals contamination (i.e. D&HC, tailings piles and OMA). According to NYSDOH, two of the property owners provided access to their drinking water wells. Based upon a comparison of these results to applicable drinking water standards, NYSDOH concluded that the tested wells had not been impacted by Site contaminants.

2. Potential for continued State/local response

NYSDEC will continue routine inspections of the Site, conduct additional soil investigations and complete the Phase 1B CRS at the Site. NYSDEC will continue to assist EPA with coordinating Site activities with other stakeholders, namely the NYSDEC Division of Fish and Wildlife, NYSDEC Division of Environmental Remediation, NYSDEC Division of Lands and Forest, NYSDEC Division of Mineral Resources, Sullivan County and private land owners.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES

The release to the environment of hazardous substances, pollutants or contaminants at the Site presents a threat to the public health and the environment as defined by Section 300.415(b)(2) of the NCP. Lead contamination is widespread throughout the Site and is found in elevated concentrations on hiking trails, wetlands, surface water drainage areas and in waterbodies. A large percentage (greater than 70%) of the contaminated material is characterized as toxic for lead pursuant to RCRA.

Lead is a naturally occurring, bluish-gray metal found in small amounts in the earth's crust. Lead can be found in all parts of our environment. Much of it comes from human activities, including burning fossil fuels, mining and manufacturing. The main target for lead toxicity is the nervous system in both adults and children. Long-term exposure of adults to lead at work has resulted in decreased performance in some tests that measure functions of the nervous system. Lead exposure may also cause weakness in fingers, wrists or ankles. Lead exposure may also cause anemia. At high levels of exposure, lead can severely damage the brain and kidneys in adults and ultimately cause death. In pregnant women, high levels of exposure to lead may cause miscarriages. High-level exposure in men can damage organs for sperm production.

The following criteria are directly applicable to the threats that exist at the Site:

(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, or pollutants, or contaminants.

The presence of lead at the surface in soil/sediments, tailings and millings at the Site poses a significant threat to human health, animals and the food chain. Lead concentrations as high as 49,000 mg/kg are present in areas of the Site that are frequently used by the public for hiking, hunting and off-road riding. A large

wetland area and the D&HC receive lead-contaminated surface water from the former mining areas, which threatens the native wildlife and their associated food chain. Visitors to the Site risk direct exposure to lead through ingestion and/or inhalation of contaminated dust particulates.

(ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems.

A 20-acre wetland is located at the base of the mountain at the Site. Surface water draining off of the mountain carries lead-contaminated sediments into the downgradient wetlands and adjacent D&HC. The soil/sediments in the wetlands and canal are both heavily contaminated with lead at concentrations as high as 49,000 mg/kg. Surface water in the wetlands is contaminated with lead at concentrations as high as 2.9 mg/l. The lead contamination in these areas pose a significant threat to reptiles, amphibians, fish and mammals in the area. Furthermore, hikers who frequent the area may fill their drinking water bottles with lead-contaminated surface water.

(iv) Hazardous substances, or pollutants, or contaminants in soils largely at or near the surface that may migrate.

Lead is present in elevated concentrations in tailings, millings and surface soil/sediments on the Site. Lead contamination in soil particulates are migrating from the former mines on the slope of the mountain into the wetlands and D&HC during rain and melting snow events and by wind dispersion. Sampling of sediments in the wetland and D&HC have verified high concentrations of lead.

(v) Weather conditions that may cause hazardous substances, or pollutants, or contaminants to migrate or be released.

Rain and snow events, which average 47.6 inches and 57.6 inches, respectively, on an annual basis, are the primary cause for the migration and continued release of lead from the Site. Surface water drainage during these events serves as a transport mechanism for lead contaminated particulates/sediments to be redeposited in other areas of the Site or off-site areas. Freeze/thaw cycles result in the breakdown of larger particulates resulting in the continued release of lead-contaminated media and its migration.

(vii) The availability of other appropriate federal or State response mechanisms to respond to the release.

There is no State agency capable of taking timely and appropriate action to respond to the threats posed by the presence of hazardous substances at the Site.

IV. ENDANGERMENT DETERMINATION

Actual and potential releases of hazardous substances from the Site, if not addressed, may present an imminent and substantial endangerment to public health or welfare or the environment.

V. EXEMPTION FROM STATUTORY LIMITS

Conditions at the Site meet the criterion for an exemption from the statutory time limitations.

A. Emergency Exemption

Section 104(c)(1) of CERCLA, as amended, limits Federal emergency response to 12 months, unless the criteria are met for an emergency exemption. The immediate risks to public health and welfare and the environment posed by the lead-contaminated tailings, millings, water and soil/sediment found at the Site warrant the 12-month exemption for the following reasons:

1. There is an immediate risk to public health or welfare or the environment;

Lead present in samples collected from surface media is at concentrations as high as 49,000 mg/kg with more than 70% of the sampled materials identified as RCRA hazardous waste. The public (hikers, hunters, campers and off-road riders) is likely to be exposed to lead at the Site. Lead contamination has accumulated in a 20-acre wetland that drains to the adjacent D&HC. Both the wetland and canal are ecosystems that have been severely impacted by lead released to the environment from tailing and milling waste piles.

2. Continued response actions are immediately required to prevent, limit or mitigate an emergency; and

The elevated levels of lead pose a public health threat to anyone who may come in contact with contaminated media at the Site. Very high concentrations of lead are present in tailing piles on the mountainside, in milling piles at the base of the mountain and in the adjacent wetlands and D&HC. Continued response actions by implementing the change in scope of work will help to minimize the emergency concerning direct contact threats at the Site.

3. Assistance will not otherwise be provided on a timely basis.

There are no other federal, State, or local government entities with sufficient resources to address the immediate threats to public health, as memorialized in this action memorandum, on a timely basis.

VI. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed action description

A change in scope of response is proposed in this Action Memorandum to address the direct contact public health threats discussed in Section III. Recent assessment investigations identified surface soil contamination on a public tow path and abandoned railroad bed located in the Linear Park and WRSF. Discussions with NYSDEC on mitigation options for the milling area located in the OMA have been productive. If the change in scope of work is approved, EPA will install a protective cover over the contaminated areas on the tow path and in the OMA milling area. The contaminated locations on the tow path and railroad bed will be covered with stabilization fabric and three inches of stone. A more substantial cover consisting of stabilization fabric and six to twelve inches of crushed stone will be installed in the milling area. In addition, chain-link fencing will be installed at access points to the OMA where ATV riders have gained entry. These actions can be completed in 4 weeks following approval of the Action Memorandum.

To complete the proposed actions an additional $200,000 in mitigation funding is requested for labor and materials.

Following the completion of the proposed action in the milling area, post-removal Site controls ("PRSC") will be necessary. PRSCs will involve monitoring the condition of the security fence and the protective cover materials. NYSDEC has agreed to inspect the areas addressed under this removal action for damage.

2. Contribution to remedial performance

The action proposed will not impede future responses.

3. Engineering Evaluation/Cost Analysis ("EE/CA")

Due to the emergency nature of this removal action, an EE/CA has not been prepared.

4. Applicable or relevant and appropriate requirements ("ARARs")

ARARs within the scope of this removal action, including the RCRA and the Hazardous Materials Transportation Uniform Safety Act regulations that pertain to the disposal of hazardous wastes, will be met.

5. Project schedule

Emergency response actions at the Site commenced on October 14, 2015. The proposed work is anticipated to begin November 14, 2016 and continue to December 23, 2016. A

12-month exemption is requested because the work is continuing past the one year statutory limit for a removal action.

B. Estimated Costs

The estimated costs for the completion of this project are summarized below. A detailed confidential independent government cost estimate, prepared at the time verbal authorization was provided, is included in the Confidential Section of this Memorandum.

EXTRAMURAL COSTS	Funding Verbally Authorized on 9/23/2015	Additional Funding Requested	Proposed Ceiling
Regional Removal Allowance Costs			
Total Cleanup Contractor Costs (including labor, equipment, materials)	$500,000	$200,000	$700,000
Other Extramural Costs Not Funded from the Regional Allowance			
Total Contract Laboratory Program, Removal Support Team, Atlantic Strike Team	$150,000		$150,000
Subtotal, Extramural Costs	$650,000		$850,000
Extramural Costs Contingency (20% of Subtotal, Extramural Costs, rounded to nearest 1,000)	$0		$0
TOTAL REMOVAL ACTION PROJECT CEILING	$650,000	$200,000	$850,000

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

A delay in action or no action at the Site will result in the continued direct contact threat to the public posed by lead present on hiking trails and in millings located in the OMA.

VII. OUTSTANDING POLICY ISSUES

There are no known outstanding policy issues associated with the Site at the present time.

VIII. ENFORCEMENT

EPA's search for viable potentially responsible parties ("PRPs") is ongoing. PRPs may take over the on-going removal action, conduct future response actions or reimburse EPA for response costs.

Based on full cost accounting practices, total EPA costs for this removal action that will be eligible for cost recovery are estimated to be $1,492,000. The following chart describes these costs.

Cost Type	Funding Requested in this Action Memorandum
Direct Extramural Costs	$ 850,000
Direct Intramural Costs	$ 150,000
Subtotal, Direct Costs	$1,000,000
Indirect Costs (Indirect Regional Cost Rate 49.2%)	$ 492,000
Estimated EPA Costs Eligible for Cost Recovery	$1,492,000

Note: Direct costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual costs from this estimate will affect the United States right to cost recovery.

IX. RECOMMENDATION

This decision document represents the selected removal action (RV1) for the Wurtsboro Lead Mine Site in Wurtsboro, Sullivan County, New York, developed in accordance with CERCLA and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP Section 300.415(b) criteria for a removal action. The total project ceiling verbally authorized on September 23, 2015 was $650,000, of which $500,000 was for mitigation contracting. This Action Memorandum requests an additional $200,000 for mitigation contracting to implement the change in scope of work. If approved the total Site ceiling would be raised to $850,000, of which $700,000 would be for mitigation contracting.

Please indicate your formal approval of the verbal authorization, change in scope of work, ceiling increase, and 12-month exemption for the emergency removal action at the Wurtsboro Lead Mine Site, as per current Delegation of Authority, by signing below.

Approved: _____ Date: 10/31/2016

Walter E. Mugdan, Direction
Emergency and Remedial Response Division

Disapproved: _____ Date: _____

Walter E. Mugdan, Director
Emergency and Remedial Response Division

cc: (upon approval)
W. Mugdan, ERRD-D
J. Prince, ERRD-DD
J. Rotola, ERRD-RAB
D. Harkay, ERRD-RAB
A. Confortini, ERRD-RAB
B. Grealish, ERRD-RAB
T. Lieber, ORC-NYCSB
V. Capon, ORC-NYCSB
M. Ludmer, ORC-NYCSB
M. Mears, PAD
K. Giacobbe, OPM-GCMB
M. Fiore, OIG
T. Grier, 5202GA.
A. Raddant, USDOI
L. Rosman, NOAA
R. Craig, RST

ATTACHMENT A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
OCT 6 2015 NEW YORK, NEW YORK 10007

SUBJECT: Confirmation of Verbal Authorization to Initiate Removal Action Activities at the Wurtsboro Lead Mine Site in Mamakating, Sullivan County, New York

FROM: Andrew L. Confortini, On Scene Coordinator
Removal Action Branch

TO: Walter E. Mugdan, Director
Emergency and Remedial Response Division

THRU: Joseph D. Rotola, Chief
Removal Action Branch

The purpose of this memorandum is to confirm the Division Director's September 23, 2015 verbal authorization of $500,000 in mitigation funding and $150,000 in RST contractor funding for a total project ceiling of $650,000 to initiate an emergency Comprehensive Environmental Response Compensation and Liability Act (CERCLA) removal action at the Wurtsboro Lead Mine Site (Site ID# A25U).

On September 4, 2015, EPA received a written request from the New York State Department of Environmental Conservation (NYSDEC) requesting the conditions at the Wurtsboro Lead Mine Site (Site) be evaluated for a possible CERCLA emergency response action. The Site (NYSDEC Site No. 353013) is a lead mine that was abandoned in 1962. EPAs review of the Site Characterization Report (July 2013) prepared for the NYSDEC, concluded that a human exposure pathway exists at the Site from direct contact to lead present in mine wastes. These wastes include mine tailings, millings, overburden rock, and surface water discharges.

The Site is located in the Wurtsboro Ridge State Forest in the Town of Mamakating, Sullivan County, New York and the Delaware and Hudson (D&H) Canal Linear Park. The area of contamination associated with the mine operation encompasses approximately 20-acres of the 1,000-acre State Forest.

The Site is comprised of two main areas: the upper area of former mining operations and the lower area of former ore processing operations. The elevation between upper and lower portions range from approximately 1,300-feet above mean sea level (msl) to 550-feet above msl. The

upper portion is owned by the State of New York and managed by NYSDEC. The lower portion is primarily located on state-owned land, however contamination extends to the adjacent Delaware and Hudson (D&H) Canal Linear Park, which is owned and maintained by Sullivan County.

The mine was historically known as the Shawangunk Mine and the Mamakating Mine, which was one of several zinc-lead mines in the Shawangunk Mountains. During mining operations, low-grade overburden was extracted from shafts to reach veins of high-grade galena. The galena ore was conveyed via an aerial tram, which carried the material down the slope to the mill. The mining operation created four distinct surface deposits of mine tailings that remain on the property. Three of the tailing deposits are located in the upper area adjacent to the old mine shafts. The fourth is comprised of sand sized material resulting from the milling process, which is located in the lower area adjacent to the D&H Canal and Linear Park. Groundwater discharge, which emanates from the upper mine and lower mine runs through the tailing piles and discharges into the D&H Canal. Soil particles from the lower tailings pile have migrated and accumulated as a fine-grained sediment deposit in the D&H Canal.

The NYSDEC posted warning signs around the perimeters of the tailings piles, establishing restricted areas warning the public that the soil and water in the area is contaminated with lead.

The principal threat to the public is direct contact with high levels of lead in the tailings piles and surface/groundwater runoff. The tailings piles have been tested and found to contain Toxicity Characteristic Leaching Procedure (TCLP) concentrations ranging from 5.3 to 268 parts per million (ppm). A TCLP concentration of 5ppm meets the regulatory criteria as a hazardous waste. Water samples collected at the lower mine discharge point have been found to contain lead concentrations which range from 410 to 710 parts per billion (ppb). The NYSDEC ecological Quality Standard for lead in surface water is 4.1ppb.

The Site is accessed by the public as evidenced by all-terrain vehicle tracks, empty beverage containers, signs of target shooting, the presence of a geocache, and websites describing the collection of galena fragments in the tailings piles. The public would be exposed to hazardous substances during their visits to the area. NYSDEC requested that the EPA consider an emergency removal action to address the direct contact threat to hazardous substances, particularly lead.

Prior to initiating any action at a mine site, EPA Headquarters approval is now required. Headquarters provided written authorization to Region 2's Removal Action Branch on September 17, 2015.

On September 22 and 23, 2015, EPA met with NYSDEC representatives at the Site to inspect the upper and lower former operation areas.

Based on the NYSDEC sampling events and results from their laboratory analysis, the mine tailings, millings, overburden rock, and surface water are considered CERCLA designated hazardous substances as defined in section 101(14) of CERCLA, 42 U.S.C. § 9601(14). The Site is defined as a facility under Section 101(9) of CERCLA, 42 U.S.C. § 9601(9). Conditions at the Site meet the requirements of Section 300.415(b) of the National Contingency Plan (NCP) for the undertaking of a CERCLA removal action.

The removal action activities to be conducted under this verbal authorization will include:

: Consolidating wastes;
: Installing security fencing and signage;
: Evaluation/Stabilization of entrance roads;
: Pre-classification of wastes;
: Preparation of work plans to remove lead-contaminated wastes; and
: Pilot tests on passive treatment systems for surface water discharges.

This confirmation memorandum will be followed by a full Action Memorandum to document the removal action, and to request a 12-month exemption and ceiling increase.

ATTACHMENT B

Confortini, Andrew

From: Rotola, Joe
Sent: Thursday, September 17, 2015 2:16 PM
To: Harkay, Dan; Pane, Mark; Confortini, Andrew
Cc: Giacobbe, Karen
Subject: Fwd: Proposed Removal Work at the Wurtsboro Lead Mine Site

Got it.

Sent from my iPhone

Begin forwarded message:

> **From:** "Irizarry, Gilberto" <Irizarry.Gilberto@epa.gov>
> **Date:** September 17, 2015 at 1:50:58 PM EDT
> **To:** "Mugdan, Walter" <Mugdan.Walter@epa.gov>, "Rotola, Joe" <Rotola.Joe@epa.gov>
> **Cc:** "Woolford, James" <Woolford.James@epa.gov>, "Rotola, Joe" <Rotola.Joe@epa.gov>, "Carpenter, Angela" <Carpenter.Angela@epa.gov>, "Woodyard, Josh" <Woodyard.Joshua@epa.gov>, "Fitz-James, Schatzi" <Fitz-James.Schatzi@epa.gov>, "Stalcup, Dana" <Stalcup.Dana@epa.gov>, "Cheatham, Reggie" <cheatham.reggie@epa.gov>, "Rigger, Don" <Rigger.Don@epa.gov>
> **Subject: RE: Proposed Removal Work at the Wurtsboro Lead Mine Site**
>
> Walter and Joe:
>
> In consultation and following a review by both OSRTI and OEM, per the 9/4/15 memo, HQ concurs with you proceeding with the proposed action(s) at the subject site outlined in your note/request below.
>
> Please do keep us aware of progress and/or of any concerns or issues that arise over the course of the site work.
>
> Thanks and regards,
>
> Gilberto "Tito" Irizarry, Director
> Preparedness & Response Operations Division (PROD)
> Office of Emergency Management (OEM)
> U.S. Environmental Protection Agency
> O: 202-564-7982
> C: 202-821-8138

> **From:** Cheatham, Reggie
> **Sent:** Friday, September 11, 2015 9:30 AM
> **To:** Mugdan, Walter
> **Cc:** Woolford, James; Rotola, Joe; Carpenter, Angela; Irizarry, Gilberto; Woodyard, Josh; Fitz-James, Schatzi; Stalcup, Dana
> **Subject:** RE: Proposed Removal Work at the Wurtsboro Lead Mine Site
>
> Walter
>
> We are working this with OSRTI. From my read it looks fine but OSRTI will need to sign off on the policy matter. Should be able to turn around early next week.

Thanks

Reggie Cheatham, Director
Office of Emergency Management
202-564-8003(w) 202-689-9400(c)

From: Mugdan, Walter
Sent: 9/10/2015 6:59 PM
To: Cheatham, Reggie
Cc: Woolford, James; Rotola, Joe; Carpenter, Angela
Subject: Proposed Removal Work at the Wurtsboro Lead Mine Site

Dear Reggie,

On September 4, 2015, Region 2 received a referral from the New York State Department of Environmental Conservation requesting that the Wurtsboro Mine Site be evaluated for removal eligibility. Attached is the referral for your reference.

As indicated by the referral, this is a historical mine site and lead smelter that is located in a State Forest and the Sullivan County Linear Park. The area is heavily used for recreation. Although we have yet to prepare a formal Removal Site Evaluation, based on information shared with us by the NYSDEC we believe a removal action is warranted. In addition to four mine tailing piles with lead concentrations as high 14,000 ppm , there is an ongoing release of lead contaminated water emanating from an exploratory adit that discharges to the Delaware and Hudson Canal. Lead levels as high as 710 ppb have been detected in this discharge. The migration of soil due to soil erosion from one of the tailings piles has also resulted in contamination entering the Canal, as large volumes of tailing/sedimentation can be observed in that waterway. Lead concentrations as high as 15,000 ppm have been identified in the sediment. Sediment sampling has been conducted; however, the extent of contamination has yet to be determined. It should be noted that the lead is in a highly leachable form with the majority of the lead samples collected failing the Toxicity Characterization Leaching Procedure. Due to the ongoing releases that are occurring, the heavy use of this area for recreation and the threat posed to public health and the environment, the Region would like to secure and stabilize the site while options are evaluated for the control of the ongoing discharge and removal of the tailings.

We have reviewed the guidance on work at mining sites provided by Jim Woolford, OSWER-OSRTI Director, dated September 4, 2015, It is our opinion that the Wurtsboro site qualifies as a Category 1 site. Although there is water in the mine shaft, it is well characterized, free flowing and no known blockage exists. A power point which includes photographs of the mines, tailing piles and canal is attached for your information. Included are photos of the mine entrance, photos of State personnel deep within the mine adit, and photos of the discharge, which support the determination that there is no water dammed within the mine that would be affected by the activities we propose to carry out. Our initial removal activities will focus on restricting access to the site, and removal of the stockpiled tailings and contaminated sediment in the canal. Should any intrusive work be judged necessary to address the ongoing discharge of contaminated water from within the mine, such activities will be addressed in a subsequent Action Memo and we will coordinate with you before undertaking such work.

We are requesting your concurrence on this opinion so we can move forward on the partial funding of this site before the end of FY15. If you have any questions, please contact Joe Rotola, Chief of our Removal Action Branch.

We look forward to hearing back from you at your earliest convenience.

ATTACHMENT C

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Office of the Director
625 Broadway, 12th Floor, Albany, New York 12233-7011
P: (518) 402-9706 | F: (518) 402-9020
www.dec.ny.gov

September 4, 2015

Sent Via Email Only

Mr. Walter Mugdan, Director
Emergency & Remedial Response Division
United States Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

Re: Removal Action Evaluation
Wurtsboro Lead Mine
NYSDEC Site No. 353013
Moore Lane
Mamakating (T), Sullivan County, NY

Dear Mr. Mugdan:

The New York State Department of Environmental Conservation (DEC) requests that the United States Environmental Protection Agency (EPA) evaluate the site referenced above for a CERCLA emergency removal action. This site has been discussed with Mr. Joe Rotola, EPA Federal On-Scene Coordinator (OSC), Edison, New Jersey.

The site is part of the State-owned Wurtsboro Ridge State Forest, which New York State acquired from the Open Space Institute in 1988. High levels of lead are present in four tailings piles – three near the top of the ridge where the mining excavations occurred, and one at the base of the ridge where the ore was processed. The fine fraction of these tailings piles contain levels of lead ranging from 1,000 parts per million (ppm) to 14,000 ppm, and are consistently hazardous by the toxicity characterization leaching procedure (TCLP). The tailings pile at the bottom of the ridge is adjacent to the Delaware & Hudson (D&H) Canal and Sullivan County Linear Park, with significant potential for public exposure. Water discharging from an exploratory adit near the lower tailings pile contains 710 parts per billion (ppb) of lead, and where this flows across the Sullivan County Linear Park and discharges into the D&H Canal, the lead level is 400-510 ppb. Preliminary investigations indicate that sediments in a long stretch of the canal are also contaminated with lead.

DEC has posted warning signs around the perimeters of the tailings piles, establishing restricted areas and warning that the soil and water in the area is highly contaminated with lead.

The principal threat is the potential for direct public exposure to high levels of lead in the tailings piles. The site has had unauthorized access as evidenced by all-terrain vehicle tracks, signs of target shooting, the presence of a geocache, and websites describing the collection of galena fragments in the tailings piles. Trespassers would be exposed to site hazards as a consequence of their intrusions. To address these threats, we request that EPA consider an emergency removal action to address the immediate threats.

Any questions or request for additional information regarding this site should be directed to Ms. Kiera Thompson, the DEC Project Manager, at (518) 402-9662.

Sincerely,

Michael J. Ryan, P.E.
Assistant Director
Division of Environmental Remediation

ec: Joe Rotola, EPA
Eric Mosher, EPA
James Daloia, EPA
George Zachos, EPA
Peter Kahn, EPA
Kelli Lucarino, EPA
Robert Schick, DEC
Andrew English, DEC
George Heitzman, DEC
Dennis Farrar, DEC
Edward Moore, DEC
Kiera Thompson, DEC

ATTACHMENT D

Summitville

Herschel Dr

Park Dr

Ferguson Rd

Adams Rd

Appalachian Mountains

209

Barore Rd

Wurtsboro Airport

Wurtsboro Lead Mine
Mamakating, NY 12790

Shawanga Lodge Rd

McDonald Rd

Crane Rd

Horton Rd

Shawanga Lodge Rd

Horton Rd

Legend

Site Location

N

0 0.1 0.2 0.4 0.6 0.8 Miles

Weston Solutions, Inc.
Federal East Division

In Association With Scientific and Environmental Associates, Inc., Environmental Compliance Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc.and Sovereign Consulting, Inc

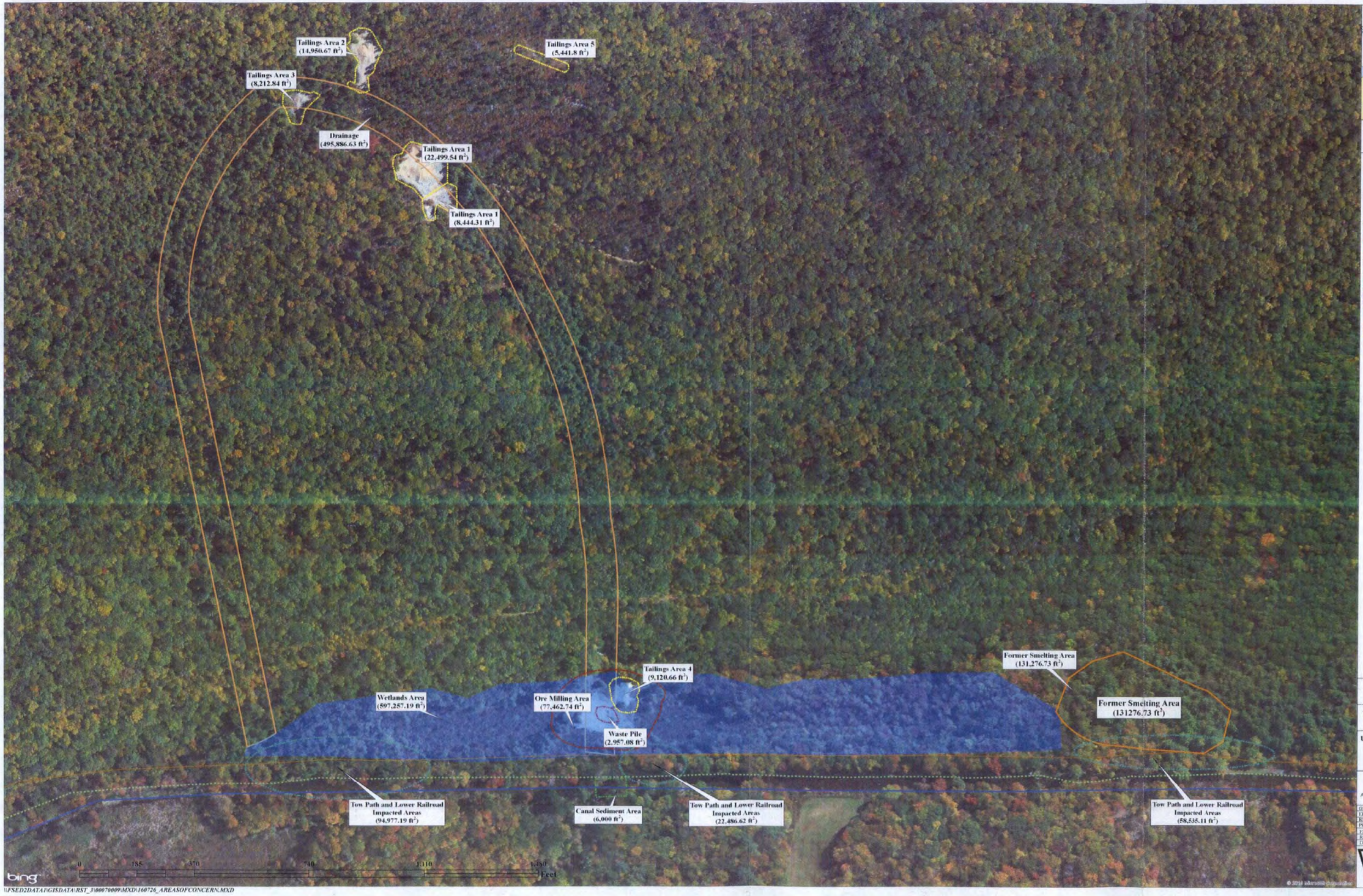
Figure 1:
Site Location Map

WURTSBORO LEAD MINE SITE
MAMAKATING, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

GIS ANALYST:	T. BENTON
EPA OSC:	A. CONFORTINI
RST SPM:	M. LANG
FILENAME:	SITE_LOCATION_MAP.MXD

DATE MODIFIED 11/2/2015



SCALE
1:1,735

LEGEND
- D & H Canal
- Lower Railroad
- Tow Path
- Tailings Area
- Canal Sediment Area
- Former Smelting Area
- Ore Milling Area
- Tow Path and Lower Railroad Impacted Areas
- Waste Pile
- Wetlands Area
- Drainage Area

Figure 2:
Areas of Concern

WURTSBORO LEAD MINE SITE
MAMAKATING, NEW YORK

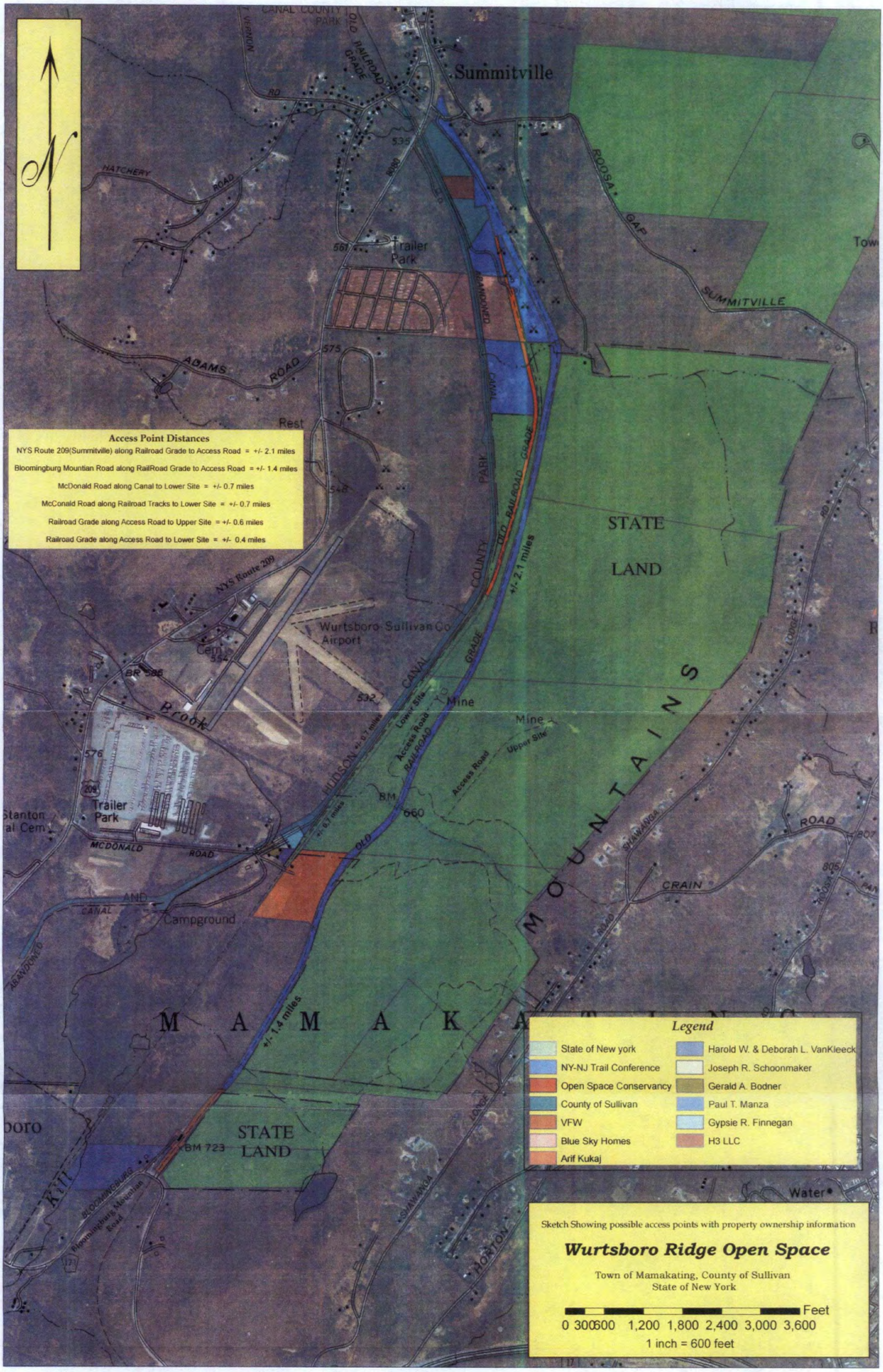
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

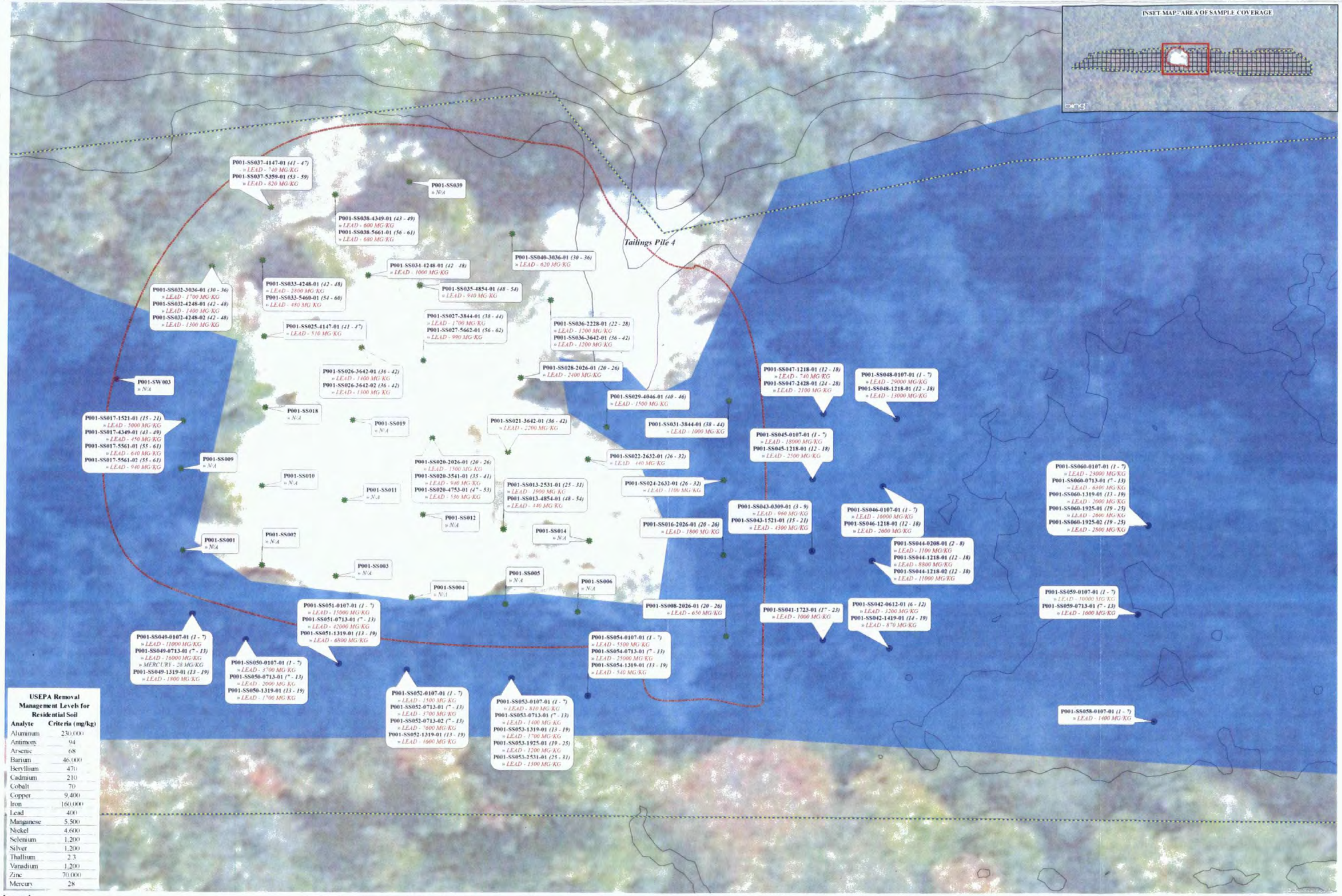
In Association With
Scientific and Environmental Associates, Inc.,
Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC, On-Site Environmental, Inc., and Sovereign Consulting, Inc

GIS ANALYST:	E. CAMPBELL
EPA OSC:	A. CONFORTINI
RST SPAL:	M. LANG
PROJECT #:	30400.031.007.3009
FIGURE:	2
REVISION:	1
DATE: MOD H23 :	7.27.2016

WESTON SOLUTIONS

\\FSED2DATA\GISDATA\RST_3\00070009\MXD\160726_AREASOFCONCERN.MXD


Summitville
CANAL COUNTY PARK
VERNON RD
OLD RAILROAD GRADE
HATCHERY ROAD
ROOSA GAP
SUMMITVILLE
Trailer Park
ABANDONED CANAL
ADAMS ROAD
Rest
Access Point Distances
NYS Route 209(Summitville) along Railroad Grade to Access Road = +/- 2.1 miles
Bloomingburg Mountian Road along RailRoad Grade to Access Road = +/- 1.4 miles
McDonald Road along Canal to Lower Site = +/- 0.7 miles
McConald Road along Railroad Tracks to Lower Site = +/- 0.7 miles
Railroad Grade along Access Road to Upper Site = +/- 0.6 miles
Railroad Grade along Access Road to Lower Site = +/- 0.4 miles
NYS Route 209
Wurtsboro-Sullivan Co Airport
Cem
BR 586
Brook
HUDSON
+/- 0.7 miles
Lower Site
Access Road
RAILROAD GRADE
Mine
Upper Site
Access Road
+/- 2.1 miles
COUNTY PARK
OLD RAILROAD GRADE
STATE LAND
MOUNTAINS
Trailer Park
MCDONALD ROAD
CANAL
Campground
SHAWANGA ROAD
CRAIN ROAD
+/- 1.4 miles
M A M A K A
STATE LAND
BM 723
BLOOMINGBURG Bloomingburg Mountian Road
SHAWANGA
HORTON
Water
Legend
State of New york
NY-NJ Trail Conference
Open Space Conservancy
County of Sullivan
VFW
Blue Sky Homes
Arif Kukaj
Harold W. & Deborah L. VanKleeck
Joseph R. Schoonmaker
Gerald A. Bodner
Paul T. Manza
Gypsie R. Finnegan
H3 LLC
Sketch Showing possible access points with property ownership information
Wurtsboro Ridge Open Space
Town of Mamakating, County of Sullivan
State of New York
Feet
0 300600 1,200 1,800 2,400 3,000 3,600
1 inch = 600 feet



USEPA Removal Management Levels for Residential Soil

Analyte	Criteria (mg/kg)
Aluminum	230,000
Antimony	94
Arsenic	68
Barium	46,000
Beryllium	470
Cadmium	210
Cobalt	70
Copper	9,400
Iron	160,000
Lead	400
Manganese	5,500
Nickel	4,600
Selenium	1,200
Silver	1,200
Thallium	2.3
Vanadium	1,200
Zinc	70,000
Mercury	28

Legend

- OMA Testpit Sample Location
- Wetland Sample Location
- Surface Water Sample Location
- Topographic Contour (5 foot)
- Tailings Pile 4 Area
- Investigation Area
- Delineated Wetland Boundary

Notes:
Sample results presented in milligrams per kilogram (mg/kg)
Analysis for Total Analyte List (TAL) Metals
Results presented here represent exceedances in U.S. Environmental Protection Agency (EPA) Removal Mangement Levels (RML) for Residential Soil to either a 10-4 risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
Results in RED indicate exceedance in lead (400 mg/kg)

12 6 0 12 24
Graphic Scale in Feet

WESTON SOLUTIONS SM

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201, Edison, NJ 08837
TEL: (732) 585-4400 Fax: (732) 225-7037
http://www.westonsolutions.com

REMOVAL SUPPORT TEAM 3
In association with
Scientific and Environmental Associates, Inc.
Avatar Environmental, LLC, Environmental Compliance Consultants
On-Site Environmental, Inc., and Sovereign Consulting, Inc.

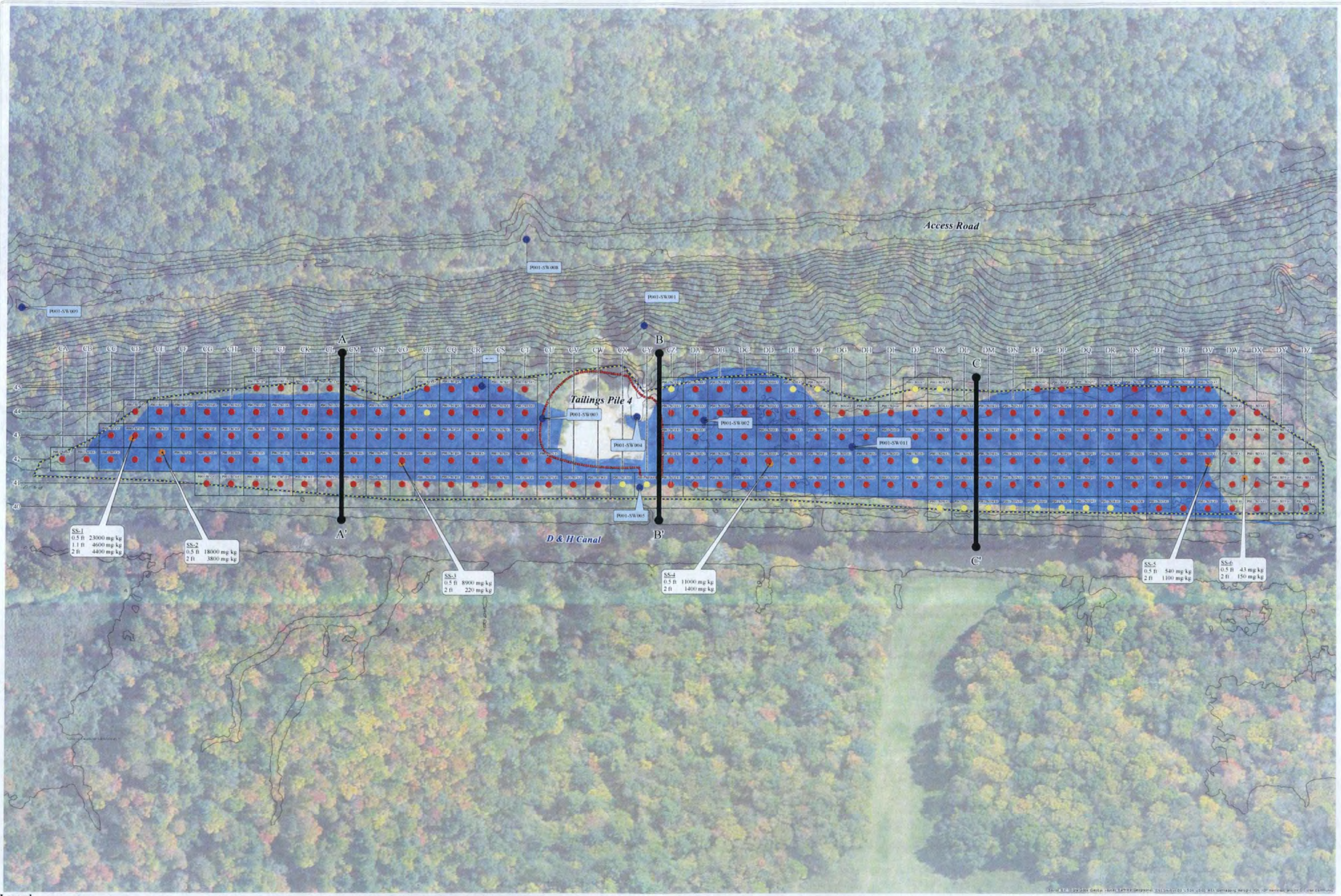
REPORT DATE: NOVEMBER 2015	EPA OSC: A. CONFORTINI
DRAWING PATH: 160728_WLS_OreMillingArea&PARML.mxd	RST SPM: M. LANG
REVISION No: 1	CONTRACT No: EP-S2-14-01
WORK ORDER No: 30400.021.006.2100	GIS ANALYST: P. LISICHENKO; DATE CREATED: 11/16/2015

CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PROJECT NAME: WURTSBORO LEAD SITE, WURTSBORO, NEW YORK

DRAWING TITLE: ORE MILLING AREA SAMPLE RESULTS EXCEEDING U.S. EPA RML CRITERIA

FIGURE: 4 SCALE: 1:144 DATE: 7/28/2016



Legend

- EPA Soil Sample Location
- No Soil Sample Collected
- NYSDEC Lead Sample Location - April and July 2014
- EPA Surface Water Sample Location
- Topographic Contour (5 foot)
- Tailings Pile 4 Area
- Investigation Area
- 50 Foot by 50 Foot Sample Grid
- Delineated Wetland Boundary

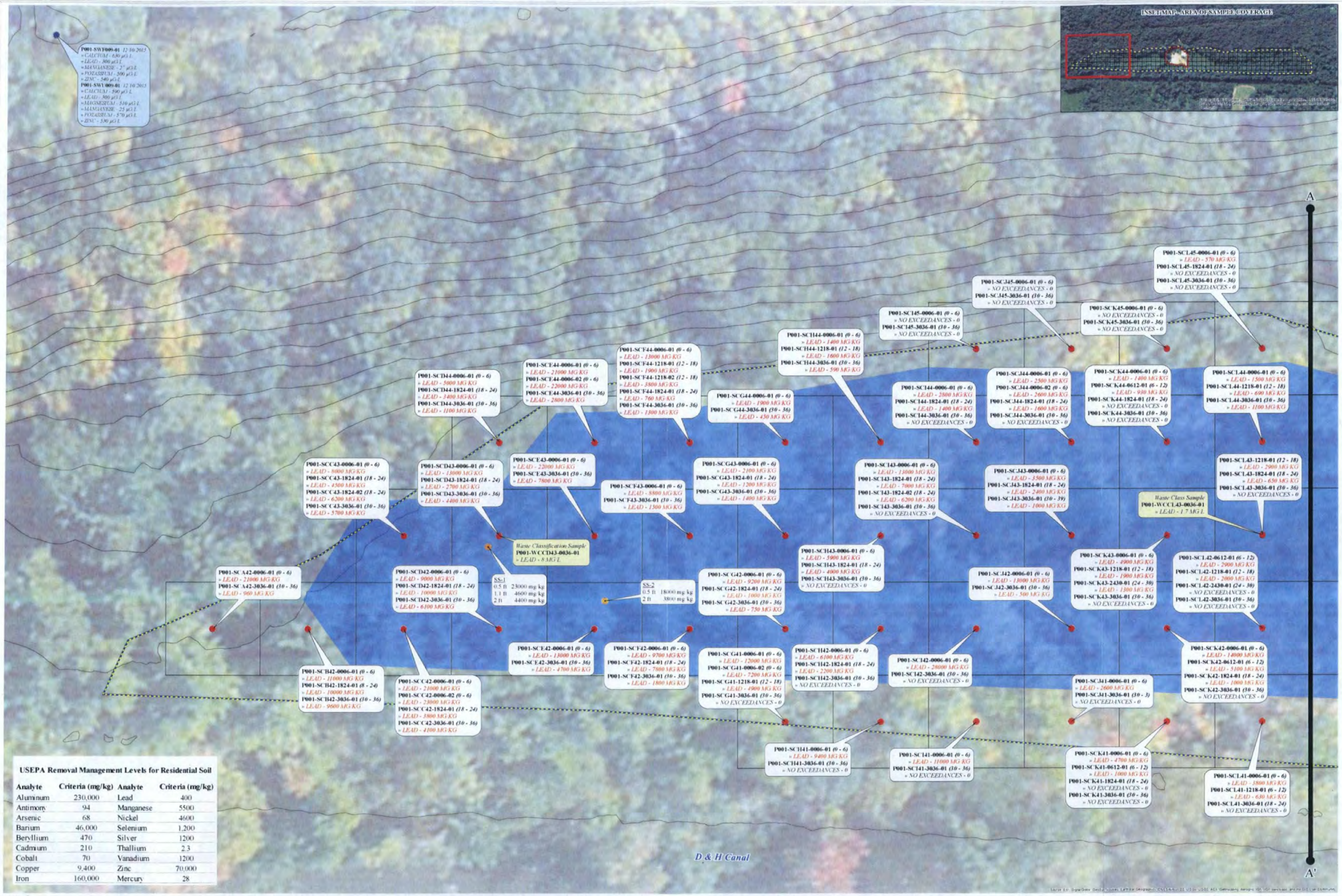
0 32.5 65 130 195 260
Graphic Scale in Feet

WESTON SOLUTIONS

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201, Edison, NJ 08837
TEL: (732) 585-4400 Fax: (732) 225-7037
http://www.westonsolutions.com

REMOVAL SUPPORT TEAM 3
In association with:
Scientific and Environmental Associates, Inc.,
Avatar Environmental, LLC, Environmental Compliance Consultants,
On-Site Environmental, Inc., and Sovereign Consulting, Inc.

REPORT DATE: JULY 2016	EPA OSC: A. CONFORTINI	CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	DRAWING TITLE: WETLANDS SAMPLE LOCATION MAP
DRAWING PATH: 160211_WLS_WetlandsSampleLoc.mxd	RST SPM: M. LANG		
REVISION No: 3	CONTRACT No: EP-S2-14-01	PROJECT NAME: WURTSBORO LEAD SITE WURTSBORO, NEW YORK	
WORK ORDER No: 30400.031.007.3009	GIS ANALYST: P. LISICHENKO; DATE CREATED: 11/16/2015		FIGURE: 5 SCALE: 1:780 DATE: 7/28/2016



USEPA Removal Management Levels for Residential Soil

Analyte	Criteria (mg/kg)	Analyte	Criteria (mg/kg)
Aluminum	230,000	Lead	400
Antimony	94	Manganese	5500
Arsenic	68	Nickel	4600
Barium	46,000	Selenium	1,200
Beryllium	470	Silver	1200
Cadmium	210	Thallium	2.3
Cobalt	70	Vanadium	1200
Copper	9,400	Zinc	70,000
Iron	160,000	Mercury	28

Legend

- EPA Soil Sample Location
- NYSDEC Lead Sample Location - April and July 2014
- EPA Surface Water Sample Location
- Topographic Contour (5 foot)
- Tailings Pile 4 Area
- Investigation Area
- 50 Foot by 50 Foot Sample Grid
- Delineated Wetland Boundary

Notes:
Soil sample results presented in milligrams per kilogram (mg/kg), analysis for Total Analyte List (TAL) Metals
Water sample results presented in micrograms per liter (ug/L), analysis for TAL Metals
Waste Classification Samples presented in milligrams per Liter (mg/L)
Results presented here represent exceedances in U.S. Environmental Protection Agency (EPA) Removal Mangement Levels (RML) for Residential Soil to either a 10-4 risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
Results in RED indicate exceedance in lead (400 mg/kg)
"NO EXCEEDANCE 0" indicates no exceedances in EPA RML for the interval indicated

0 7.5 15 30
Graphic Scale in Feet

WESTON SOLUTIONS SM

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REMOVAL SUPPORT TEAM 3
In association with
Scientific and Environmental Associates, Inc.,
Avatar Environmental, LLC, Environmental Compliance Consultants
On-Site Environmental, Inc., and Sovereign Consulting, Inc.

REPORT DATE	JULY 2016
EPA OSC	A. CONFORTINI
DRAWING PATH	160208_WLS_WetlandNorthEPARML_1.mxd \\fsed2data\gisdata\RST_3\0006\01\MXD
RST SPM	M. LANG
REVISION No	3
CONTRACT No	EP-S2-14-01
WORK ORDER No	30400.031.007.3009
GIS ANALYST	P. LISICHENKO
DATE CREATED	11/16/2015
CLIENT NAME	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PROJECT NAME	WURTSBORO LEAD SITE WURTSBORO, NEW YORK
DRAWING TITLE	NORTHERN WETLANDS (1) SAMPLE RESULTS EXCEEDING U.S. EPA RMLs
FIGURE	5A
SCALE	1:200
DATE	7/28/2016

Legend

- EPA Soil Sample Location
- No Soil Sample Collected
- NYSDEC Lead Sample Location - April and July 2014
- EPA Surface Water Sample Location
- Topographic Contour (5 foot)
- Tailings Pile 4 Area
- Investigation Area
- 50 Foot by 50 Foot Sample Grid
- Delineated Wetland Boundary

Notes:
Soil sample results presented in milligrams per kilogram (mg/kg), analysis for Total Analyte List (TAL) Metals
Water sample results presented in micrograms per liter (ug/L), analysis for TAL Metals
Results presented here represent exceedances in U.S. Environmental Protection Agency (EPA) Removal Mangement Levels (RML) for Residential Soil to either a 10-4 risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
Results in RED indicate exceedance in lead (400 mg/kg)
"NO EXCEEDANCE 0" indicates no exceedances in EPA RML for the interval indicated

0 7.5 15 30
Graphic Scale in Feet

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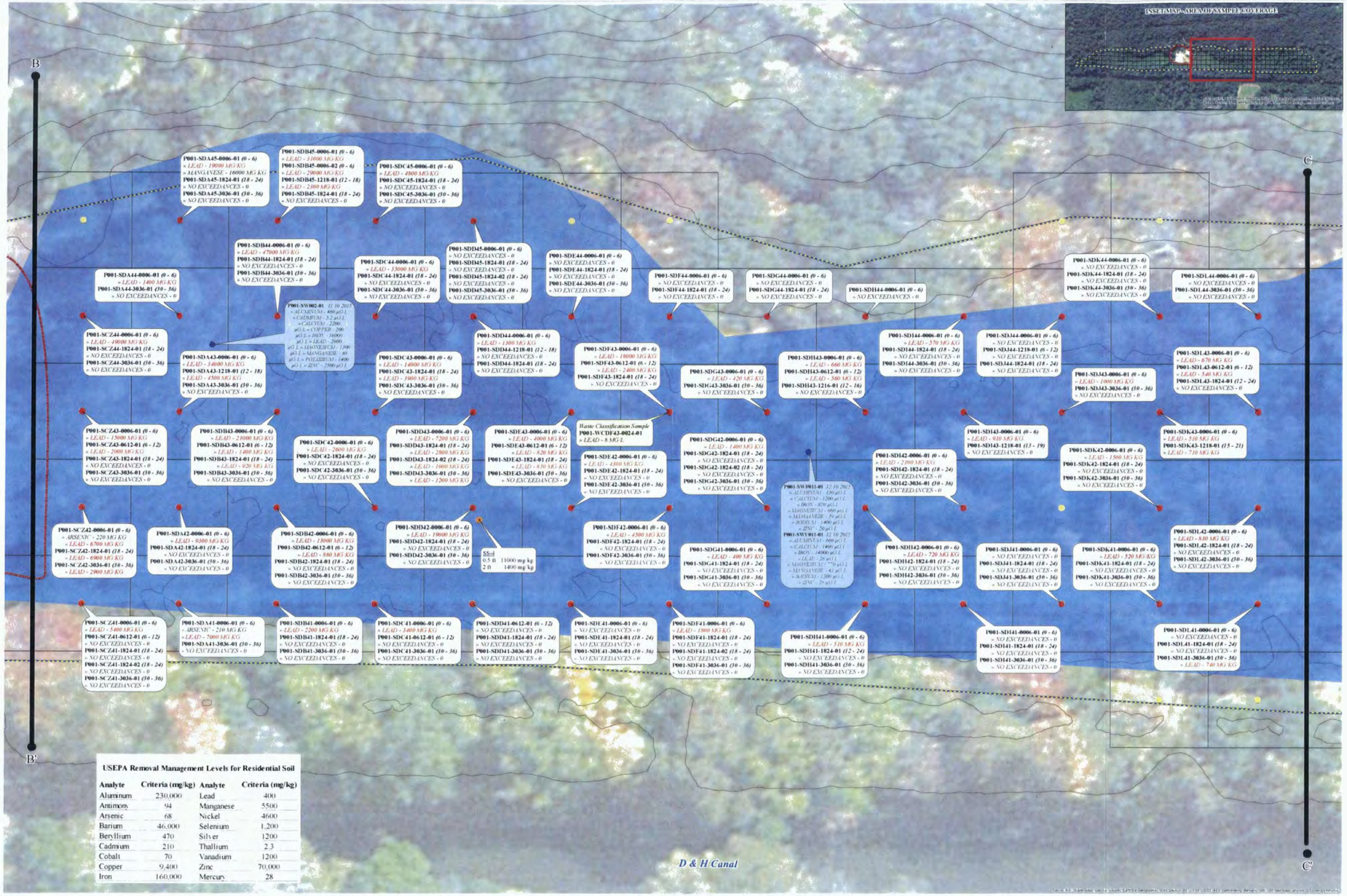
REMOVAL SUPPORT TEAM 3

REPORT DATE: JULY 2016	EPA OSC: A. CONFORTINI	CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	DRAWING TITLE: NORTHERN WETLANDS (2) SAMPLE RESULTS EXCEEDING U.S. EPA RMLs
REVISION No: 3	RST SPM: M. LANG	PROJECT NAME: WURTSBORO LEAD SITE WURTSBORO, NEW YORK	
WORK ORDER No: 30400 031 007 3009	CONTRACT No: EP-S2-14-01		FIGURE: 5B
	GIS ANALYST: P. LISICHENKO		SCALE: 1:195
	DATE CREATED: 11/16/2015		DATE: 7/28/2016



USEPA Removal Management Levels for Residential Soil

Analyte	Criteria (mg/kg)	Analyte	Criteria (mg/kg)
Aluminum	230,000	Lead	400
Antimony	94	Manganese	5500
Arsenic	68	Nickel	4600
Barium	46,000	Selenium	1,200
Beryllium	470	Silver	1200
Cadmium	210	Thallium	2.3
Cobalt	70	Vanadium	1200
Copper	9,400	Zinc	70,000
Iron	160,000	Mercury	28

Legend

- EPA Soil Sample Location
- No Sample Collected
- NYSDEC Lead Sample Location - April and July 2014
- EPA Surface Water Sample Location
- Topographic Contour (5 foot)
- Tailings Pile 4 Area
- Investigation Area
- 50 Foot by 50 Foot Sample Grid
- Delineated Wetland Boundary

Notes:
Soil sample results presented in milligrams per kilogram (mg/kg); analysis for Total Analyte List (TAL) Metals
Water sample results presented in micrograms per liter (µg/L); analysis for TAL Metals
Waste Classification Samples presented in milligrams per Liter (mg/L)
Results presented here represent exceedances in U.S. Environmental Protection Agency (EPA) Removal Management Levels (RML) for Residential Soil to either a 10-3 risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
Results in RED indicate exceedance in lead (400 mg/kg)
"NO EXCEEDANCES" indicates no exceedances in EPA RML for the interval indicated

0 7.5 15 30
Graphic Scale in Feet

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REMOVAL SUPPORT TEAM 3
In association with
Scientific and Environmental Associates, Inc.
Avatar Environmental, LLC; Environmental Compliance Consultants;
On-Site Environmental, Inc.; and Sovereign Consulting, Inc.

REPORT DATE: JULY 2016
EPA OSC: A. CONFORTINI
DRAWING PATH: 160208_WLS_WetlandSouthEPARML_1.mxd
RST SPM: M. LANG
REVISION No: 3
CONTRACT No: EP-S2-14-01
WORK ORDER No: 30400.031.007.3009
GIS ANALYST: P. LISICHENKO
DATE CREATED: 11/16/2015

CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PROJECT NAME: WURTSBORO LEAD SITE, WURTSBORO, NEW YORK

DRAWING TITLE: SOUTHERN WETLANDS (1) SAMPLE RESULTS EXCEEDING U.S. EPA RMLs

FIGURE: 5C
SCALE: 1:195
DATE: 7/28/2016

USEPA Removal Management Levels for Residential Soil

Analyte	Criteria (mg/kg)	Analyte	Criteria (mg/kg)
Aluminum	230,000	Lead	400
Antimony	94	Manganese	5500
Arsenic	68	Nickel	4600
Barium	46,000	Selenium	1,200
Beryllium	470	Silver	1200
Cadmium	210	Thallium	2.3
Cobalt	70	Vanadium	1200
Copper	9,400	Zinc	70,000
Iron	160,000	Mercury	28

Legend

- EPA Soil Sample Location
- No Sample Collected
- NYSDEC Lead Sample Location - April and July 2014
- Topographic Contour (5 foot)
- Tailings Pile 4 Area
- Investigation Area
- 50 Foot by 50 Foot Sample Grid
- Delineated Wetland Boundary

Notes:
Soil sample results presented in milligrams per kilogram (mg/kg); analysis for Total Analyte List (TAL) Metals
Water sample results presented in micrograms per liter (ug/L); analysis for TAL Metals
Waste Classification Samples presented in milligrams per Liter (mg/L)
Results presented here represent exceedances in U.S. Environmental Protection Agency (EPA) Removal Mangement Levels (RML) for Residential Soil to either a 10-4 risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
Results in RED indicate exceedance in lead (400 mg/kg)
"NO EXCEEDANCE 0" indicates no exceedances in EPA RML for the interval indicated

0 7.5 15 30
Graphic Scale in Feet

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REMOVAL SUPPORT TEAM 3

REPORT DATE	JULY 2016
EPA OSC	A. CONFORTINI
RST SPM	M. LANG
REVISION No	3
CONTRACT No	EP-S2-14-01
WORK ORDER No	30400.031.007.3009
GIS ANALYST	P. LISICHENKO
DATE CREATED	11/16/2015
CLIENT NAME	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PROJECT NAME	WURTSBORO LEAD SITE, WURTSBORO, NEW YORK
FIGURE	5D
SCALE	1:208
DATE	7/28/2016

DRAWING TITLE

SOUTHERN WETLANDS (2) SAMPLE RESULTS EXCEEDING U.S. EPA RMLs

P001-TP001-TS029-0006-01 (0 - 6)
» LEAD - 44 MG/KG

P001-TP001-TS031-0006-01 (0 - 6)
» LEAD - 91 MG/KG

P001-TP001-TS030-0006-01 (0 - 6)
» LEAD - 380 MG/KG

P001-TP001-TS028-0006-01 (0 - 6)
» LEAD - 120 MG/KG
P001-TP001-TS028-0612-01 (6 - 12)
» LEAD - 29 MG/KG

P001-TP001-TS004-0006-01 (0 - 6)
» LEAD - 590 MG/KG
P001-TP001-TS004-0612-01 (6 - 12)
» LEAD - 36 MG/KG

P001-TP001-TS005-0006-01 (0 - 6)
» LEAD - 180 MG/KG

P001-TP001-TS027-0006-01 (0 - 6)
» LEAD - 310 MG/KG
P001-TP001-TS027-0612-01 (6 - 12)
» LEAD - 61 MG/KG

P001-TP001-TS026-0006-01 (0 - 6)
» LEAD - 57 MG/KG
P001-TP001-TS026-0612-01 (6 - 12)
» LEAD - 28 MG/KG

P001-TP001-TS025-0006-01 (0 - 6)
» LEAD - 360 MG/KG
P001-TP001-TS025-0612-01 (6 - 12)
» LEAD - 240 MG/KG

P001-TP001-TS010-0006-01 (0 - 6)
» LEAD - 2100 MG/KG
P001-TP001-TS010-0612-01 (6 - 12)
» LEAD - 1800 MG/KG

P001-TP001-TS024-0006-01 (0 - 6)
» LEAD - 350 MG/KG
P001-TP001-TS024-0612-01 (6 - 12)
» LEAD - 270 MG/KG

P001-TP001-TS023-0006-01 (0 - 6)
» LEAD - 1900 MG/KG

P001-TP001-TS022-0006-01 (0 - 6)
» LEAD - 620 MG/KG
P001-TP001-TS022-0006-02 (0 - 6)
» LEAD - 830 MG/KG

P001-TP001-TS009-0006-01 (0 - 6)
» LEAD - 4500 MG/KG
P001-TP001-TS009-0612-01 (6 - 12)
» LEAD - 2100 MG/KG
P001-TP001-TS009-0612-02 (6 - 12)
» LEAD - 2100 MG/KG

P001-TP001-TS019-0006-01 (0 - 6)
» LEAD - 550 MG/KG

P001-TP001-TS021-0006-01 (0 - 6)
» LEAD - 590 MG/KG

P001-TP001-TS018-0006-01 (0 - 6)
» LEAD - 990 MG/KG

P001-TP001-TS020-0006-01 (0 - 6)
» LEAD - 510 MG/KG

P001-TP001-TS008-0006-01 (0 - 6)
» LEAD - 1400 MG/KG
P001-TP001-TS008-0612-01 (6 - 12)
» LEAD - 1400 MG/KG

P001-TP001-TS012-0006-01 (0 - 6)
» LEAD - 280 MG/KG
P001-TP003-TS012-0612-01 (6 - 12)
» LEAD - 140 MG/KG

P001-TP003-TS011-0006-01 (0 - 6)
» LEAD - 250 MG/KG
P001-TP003-TS011-0612-01 (6 - 12)
» LEAD - 180 MG/KG

P001-TP003-TS013-0006-01 (0 - 6)
» LEAD - 2700 MG/KG
P001-TP003-TS013-0612-01 (6 - 12)
» LEAD - 2300 MG/KG

P001-TP003-TS014-0006-01 (0 - 6)
» LEAD - 2600 MG/KG
P001-TP003-TS014-0612-01 (6 - 12)
» LEAD - 4000 MG/KG

P001-TP003-TS015-0006-01 (0 - 6)
» LEAD - 2100 MG/KG
P001-TP003-TS015-0612-01 (6 - 12)
» LEAD - 1600 MG/KG

P001-TP003-TS006-0006-01 (0 - 6)
» LEAD - 9200 MG/KG
P001-TP003-TS006-0612-01 (6 - 12)
» LEAD - 31000 MG/KG

P001-TP003-TS016-0006-01 (0 - 6)
» LEAD - 5000 MG/KG

P001-TP003-TS003-0006-01 (0 - 6)
» LEAD - 410 MG/KG
P001-TP003-TS003-0610-01 (6 - 10)
» LEAD - 950 MG/KG

P001-TP001-TS003-0006-01 (0 - 6)
» LEAD - 220 MG/KG

P001-TP001-TS010-0006-01 (0 - 6)
» LEAD - 530 MG/KG

P001-TP003-TS005-0006-01 (0 - 6)
» LEAD - 280 MG/KG

TCLP Composite Sample (0 - 6)
» LEAD - 40 MG/L

P001-TP003-TS017-0006-01 (0 - 6)
» LEAD - 3100 MG/KG

P001-TP003-TS002-0006-01 (0 - 6)
» LEAD - 33 MG/KG

P001-TP003-TS001-0006-01 (0 - 6)
» LEAD - 140 MG/KG

P001-TP003-TS004-0006-01 (0 - 6)
» LEAD - 220 MG/KG

P001-TP001-TS002-0006-01 (0 - 6)
» LEAD - 340 MG/KG

P001-TP001-TS001-0006-01 (0 - 6)
» LEAD - 230 MG/KG

P001-TP001-TS011-0006-01 (0 - 6)
» LEAD - 3600 MG/KG

P001-TP001-TS012-0006-01 (0 - 6)
» LEAD - 820 MG/KG

P001-TP002-TS020-0006-01 (0 - 6)
» LEAD - 390 MG/KG
P001-TP002-TS020-0609-01 (6 - 9)
» LEAD - 290 MG/KG

P001-TP002-TS019-0006-01 (0 - 6)
» LEAD - 1100 MG/KG
P001-TP002-TS019-0006-02 (0 - 6)
» LEAD - 1100 MG/KG
P001-TP002-TS019-0609-01 (6 - 9)
» LEAD - 1200 MG/KG

P001-TP001-TS013-0006-01 (0 - 6)
» LEAD - 330 MG/KG

P001-TP001-TS014-0006-01 (0 - 6)
» LEAD - 120 MG/KG

TCLP Composite Sample (0 - 6)
» LEAD - 160 MG/L

TCLP Composite Sample (0 - 6)
» LEAD - 140 MG/L

P001-TP001-TS032-0006-01 (0 - 6)
» LEAD - 450 MG/KG

P001-TP002-TS018-0006-01 (0 - 6)
» LEAD - 340 MG/KG
P001-TP002-TS018-0609-01 (6 - 9)
» LEAD - 90 MG/KG

P001-TP002-TS008-0006-01 (0 - 6)
» LEAD - 510 MG/KG
P001-TP002-TS008-0612-01 (6 - 12)
» LEAD - 740 MG/KG

P001-TP002-TS017-0006-01 (0 - 6)
» LEAD - 78 MG/KG

P001-TP002-TS007-0006-01 (0 - 6)
» LEAD - 110 MG/KG
P001-TP002-TS007-0006-02 (0 - 6)
» LEAD - 200 MG/KG

P001-TP002-TS016-0006-01 (0 - 6)
» LEAD - 290 MG/KG

P001-TP002-TS006-0006-01 (0 - 6)
» LEAD - 710 MG/KG
P001-TP002-TS006-0609-01 (6 - 9)
» LEAD - 290 MG/KG

P001-TP001-TS015-0006-01 (0 - 6)
» LEAD - 230 MG/KG

P001-TP001-TS006-0006-01 (0 - 6)
» LEAD - 170 MG/KG

P001-TP001-TS007-0006-01 (0 - 6)
» LEAD - 53 MG/KG

P001-TP001-TS016-0006-01 (0 - 6)
» LEAD - 910 MG/KG

P001-TP001-TS017-0006-01 (0 - 6)
» LEAD - 1800 MG/KG

P001-TP002-TS003-0006-01 (0 - 6)
» LEAD - 4900 MG/KG
P001-TP002-TS003-0612-01 (6 - 12)
» LEAD - 2700 MG/KG

P001-TP002-TS004-0006-01 (0 - 6)
» LEAD - 590 MG/KG
» LEAD - 12000 MG/KG
P001-TP002-TS004-0612-01 (6 - 12)
» LEAD - 4300 MG/KG

P001-TP002-TS021-0006-01 (0 - 6)
» LEAD - 470 MG/KG
P001-TP002-TS021-0612-01 (6 - 12)
» LEAD - 1000 MG/KG

P001-TP002-TS023-0006-01 (0 - 6)
» LEAD - 500 MG/KG

P001-TP002-TS022-0006-01 (0 - 6)
» LEAD - 620 MG/KG

TCLP Composite Sample (0 - 6)
» LEAD - 140 MG/L

P001-TP002-TS005-0006-01 (0 - 6)
» LEAD - 220 MG/KG

P001-TP002-TS015-0006-01 (0 - 6)
» LEAD - 130 MG/KG

P001-TP002-TS024-0006-01 (0 - 6)
» LEAD - 450 MG/KG

P001-TP002-TS002-0006-01 (0 - 6)
» LEAD - 4900 MG/KG
P001-TP002-TS002-0609-01 (6 - 9)
» LEAD - 8600 MG/KG

P001-TP002-TS001-0006-01 (0 - 6)
» LEAD - 3900 MG/KG
P001-TP002-TS001-0609-01 (6 - 9)
» LEAD - 4600 MG/KG

P001-TP002-TS009-0006-01 (0 - 6)
» LEAD - 760 MG/KG

P001-TP002-TS010-0006-01 (0 - 6)
» LEAD - 2200 MG/KG

P001-TP002-TS011-0006-01 (0 - 6)
» LEAD - 370 MG/KG
P001-TP002-TS011-0006-02 (0 - 6)
» LEAD - 370 MG/KG

P001-TP002-TS012-0006-01 (0 - 6)
» LEAD - 1800 MG/KG

P001-TP002-TS013-0006-01 (0 - 6)
» LEAD - 830 MG/KG

P001-TP002-TS014-0006-01 (0 - 6)
» LEAD - 420 MG/KG

P001-TP003-TS007-0006-01 (0 - 6)
» LEAD - 3800 MG/KG

P001-TP003-TS008-0006-01 (0 - 6)
» LEAD - 1700 MG/KG

P001-TP003-TS009-0006-01 (0 - 6)
» LEAD - 6100 MG/KG

P001-TP005-TS003-0006-01 (0 - 6)
» LEAD - 14000 MG/KG

P001-TP005-TS001-0006-01 (0 - 6)
» LEAD - 710 MG/KG

P001-TP005-TS002-0006-01 (0 - 6)
» LEAD - 22000 MG/KG
P001-TP005-TS002-0612-01 (6 - 12)
» LEAD - 14000 MG/KG

0 55 110 220 330 440
Feet

bing

SCALE
1:550

LEGEND

Trailings Pile Area

Sample Date Catagory

Nov. 2015 Sample Location Only

Mar. 2016 Sample Location Only

Both Nov./March 2016 Sample Location

N

Figure 6: Tailings Areas 1,2,3,5 TAL/TCLP Analytical Results Map

WURTSBORO LEAD MINE SITE
MAMAKATING, NEW YORK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

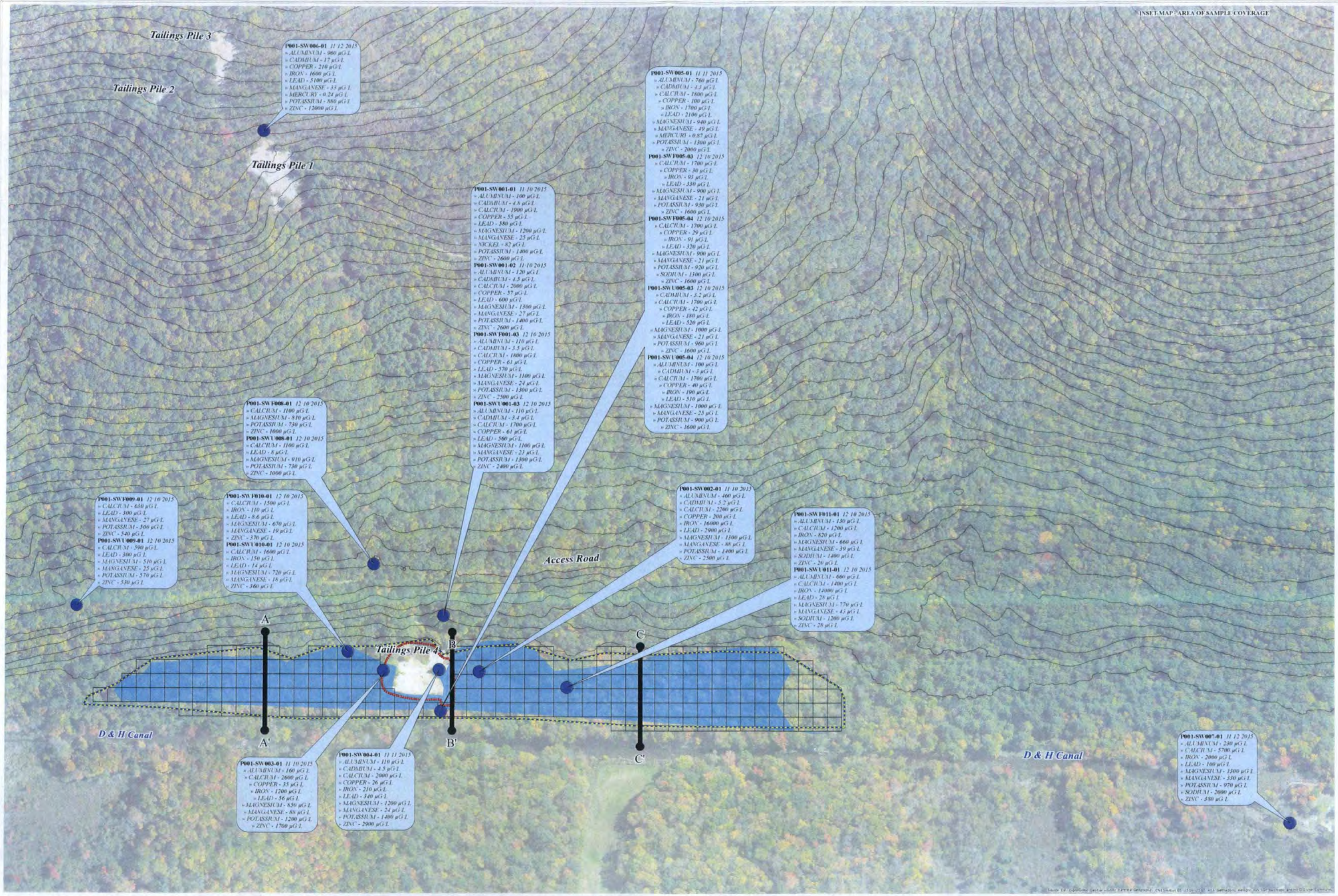
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

In Association With
Scientific and Environmental Associates, Inc., Environmental Compliance Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc., and Sovereign Consulting, Inc.

GIS ANALYST:	Y. CAMPBELL
EPA OSC:	A. CONFORTINI
RST SPM:	M. LANG
PROJECT #:	30400.031.007.3009
FIGURE:	6
REVISION:	0
DATE MODIFIED:	5/26/2016

WESTON SOLUTIONS

\\FSED2DATA\GISDATA\RST_3\00066114\MXD\160525_TAILINGS_AREAS_1_2_3_5_ANALYTICAL_RESULTS_MAP.MXD


INSET MAP - AREA OF SAMPLE COVERAGE
Tailings Pile 3
Tailings Pile 2
Tailings Pile 1
Tailings Pile 4
Access Road
D & H Canal
D & H Canal
A
A'
B
B'
C
C'
P001-SW006-01 11/12/2015
» ALUMINUM - 960 µG/L
» CADMIUM - 17 µG/L
» COPPER - 210 µG/L
» IRON - 1600 µG/L
» LEAD - 5100 µG/L
» MANGANESE - 33 µG/L
» MERCURY - 0.24 µG/L
» POTASSIUM - 880 µG/L
» ZINC - 12000 µG/L
P001-SW005-01 11/11/2015
» ALUMINUM - 760 µG/L
» CADMIUM - 4.3 µG/L
» CALCIUM - 1800 µG/L
» COPPER - 100 µG/L
» IRON - 1700 µG/L
» LEAD - 2100 µG/L
» MAGNESIUM - 940 µG/L
» MANGANESE - 49 µG/L
» MERCURY - 0.87 µG/L
» POTASSIUM - 1300 µG/L
» ZINC - 2000 µG/L
P001-SWF005-03 12/10/2015
» CALCIUM - 1700 µG/L
» COPPER - 30 µG/L
» IRON - 93 µG/L
» LEAD - 330 µG/L
» MAGNESIUM - 900 µG/L
» MANGANESE - 21 µG/L
» POTASSIUM - 930 µG/L
» ZINC - 1600 µG/L
P001-SWF005-04 12/10/2015
» CALCIUM - 1700 µG/L
» COPPER - 29 µG/L
» IRON - 91 µG/L
» LEAD - 320 µG/L
» MAGNESIUM - 900 µG/L
» MANGANESE - 21 µG/L
» POTASSIUM - 920 µG/L
» SODIUM - 1300 µG/L
» ZINC - 1600 µG/L
P001-SWU005-03 12/10/2015
» CADMIUM - 3.2 µG/L
» CALCRUM - 1700 µG/L
» COPPER - 42 µG/L
» IRON - 180 µG/L
» LEAD - 520 µG/L
» MAGNESIUM - 1000 µG/L
» MANGANESE - 21 µG/L
» POTASSIUM - 960 µG/L
» ZINC - 1600 µG/L
P001-SWU005-04 12/10/2015
» ALUMINUM - 100 µG/L
» CADMIUM - 3 µG/L
» CALCRUM - 1700 µG/L
» COPPER - 40 µG/L
» IRON - 190 µG/L
» LEAD - 510 µG/L
» MAGNESIUM - 1000 µG/L
» MANGANESE - 25 µG/L
» POTASSIUM - 900 µG/L
» ZINC - 1600 µG/L
P001-SW001-01 11/10/2015
» ALUMINUM - 100 µG/L
» CADMIUM - 4.8 µG/L
» CALCRUM - 1900 µG/L
» COPPER - 55 µG/L
» LEAD - 580 µG/L
» MAGNESIUM - 1200 µG/L
» MANGANESE - 25 µG/L
» NICKEL - 82 µG/L
» POTASSIUM - 1400 µG/L
» ZINC - 2600 µG/L
P001-SW001-02 11/10/2015
» ALUMINUM - 120 µG/L
» CADMIUM - 4.5 µG/L
» CALCRUM - 2000 µG/L
» COPPER - 57 µG/L
» LEAD - 600 µG/L
» MAGNESIUM - 1300 µG/L
» MANGANESE - 27 µG/L
» POTASSIUM - 1400 µG/L
» ZINC - 2600 µG/L
P001-SWF001-03 12/10/2015
» ALUMINUM - 110 µG/L
» CADMIUM - 3.5 µG/L
» CALCRUM - 1800 µG/L
» COPPER - 61 µG/L
» LEAD - 570 µG/L
» MAGNESIUM - 1100 µG/L
» MANGANESE - 24 µG/L
» POTASSRUM - 1300 µG/L
» ZINC - 2500 µG/L
P001-SWU001-03 12/10/2015
» ALUMINUM - 110 µG/L
» CADMIUM - 3.4 µG/L
» CALCRUM - 1700 µG/L
» COPPER - 61 µG/L
» LEAD - 560 µG/L
» MAGNESIUM - 1100 µG/L
» MANGANESE - 23 µG/L
» POTASSRUM - 1300 µG/L
» ZINC - 2400 µG/L
P001-SWF008-01 12/10/2015
» CALCRUM - 1100 µG/L
» MAGNESIUM - 810 µG/L
» POTASSIUM - 730 µG/L
» ZINC - 1000 µG/L
P001-SWU008-01 12/10/2015
» CALCIUM - 1100 µG/L
» LEAD - 8 µG/L
» MAGNESIUM - 910 µG/L
» POTASSIUM - 730 µG/L
» ZINC - 1000 µG/L
P001-SWF009-01 12/10/2015
» CALCIUM - 630 µG/L
» LEAD - 300 µG/L
» MANGANESE - 27 µG/L
» POTASSRUM - 500 µG/L
» ZINC - 540 µG/L
P001-SWU009-01 12/10/2015
» CALCRUM - 590 µG/L
» LEAD - 300 µG/L
» MAGNESIUM - 510 µG/L
» MANGANESE - 25 µG/L
» POTASSIUM - 570 µG/L
» ZINC - 530 µG/L
P001-SWF010-01 12/10/2015
» CALCRUM - 1500 µG/L
» IRON - 110 µG/L
» LEAD - 8.6 µG/L
» MAGNESIUM - 670 µG/L
» MANGANESE - 19 µG/L
» ZINC - 370 µG/L
P001-SWU010-01 12/10/2015
» CALCIUM - 1600 µG/L
» IRON - 150 µG/L
» LEAD - 14 µG/L
» MAGNESIUM - 720 µG/L
» MANGANESE - 18 µG/L
» ZINC - 360 µG/L
P001-SW002-01 11/10/2015
» ALUMINUM - 460 µG/L
» CADMIUM - 5.2 µG/L
» CALCIUM - 2200 µG/L
» COPPER - 200 µG/L
» IRON - 16000 µG/L
» LEAD - 2900 µG/L
» MAGNESIUM - 1500 µG/L
» MANGANESE - 88 µG/L
» POTASSRUM - 1400 µG/L
» ZINC - 2500 µG/L
P001-SWF011-01 12/10/2015
» ALUMINUM - 130 µG/L
» CALCRUM - 1200 µG/L
» IRON - 820 µG/L
» MAGNESIUM - 660 µG/L
» MANGANESE - 39 µG/L
» SODIUM - 1400 µG/L
» ZINC - 20 µG/L
P001-SWU011-01 12/10/2015
» ALUMINUM - 660 µG/L
» CALCRUM - 1400 µG/L
» IRON - 14000 µG/L
» LEAD - 28 µG/L
» MAGNESIUM - 770 µG/L
» MANGANESE - 43 µG/L
» SODIUM - 1200 µG/L
» ZINC - 28 µG/L
P001-SW003-01 11/10/2015
» ALUMINUM - 160 µG/L
» CALCRUM - 2600 µG/L
» COPPER - 35 µG/L
» IRON - 1200 µG/L
» LEAD - 56 µG/L
» MAGNESIUM - 850 µG/L
» MANGANESE - 88 µG/L
» POTASSIUM - 1200 µG/L
» ZINC - 1700 µG/L
P001-SW004-01 11/11/2015
» ALUMINUM - 110 µG/L
» CADMIUM - 4.5 µG/L
» CALCIUM - 2000 µG/L
» COPPER - 26 µG/L
» IRON - 210 µG/L
» LEAD - 340 µG/L
» MAGNESIUM - 1200 µG/L
» MANGANESE - 24 µG/L
» POTASSIUM - 1400 µG/L
» ZINC - 2900 µG/L
P001-SW007-01 11/12/2015
» ALUMINUM - 230 µG/L
» CALCRUM - 5700 µG/L
» IRON - 2000 µG/L
» LEAD - 100 µG/L
» MAGNESIUM - 1300 µG/L
» MANGANESE - 330 µG/L
» POTASSRUM - 970 µG/L
» SODIUM - 2000 µG/L
» ZINC - 380 µG/L

Legend

- EPA Surface Water Location
- Tailings Pile 4 Area
- Investigation Area
- 50 Foot by 50 Foot Sample Grid
- Delineated Wetland Boundary

Notes
Water sample results presented in micrograms per liter (ug/L) analysis for TAL Metals

0 50 100 200 300 400
Graphic Scale in Feet

WESTON SOLUTIONS

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1090 King Georges Post Road, Suite 201, Edison, NJ 08837
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REMOVAL SUPPORT TEAM 3
In association with
Scientific and Environmental Associates, Inc.,
Avatar Environmental, LLC, Environmental Compliance Consultants,
On Site Environmental, Inc., and Sovereign Consulting, Inc.

REPORT DATE: JULY 2016	EPA OSC: A. CONFORTINI	CLIENT NAME: UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	DRAWING TITLE: SURFACE WATER SAMPLE REULTS
DRAWING: 160209_WLS_WaterSampleMap.mxd PATH: \\fsed2data1\gisdata\RST_3\00060114\MXD	RST SPM: M. LANG		
REVISION No: 3	CONTRACT No: EP-S2-14-01	PROJECT NAME: WURTSBORO LEAD SITE WURTSBORO, NEW YORK	
WORK ORDER No: 30400.031.007.3009	GIS ANALYST: P. LISICHENKO DATE CREATED: 11/16/2015		FIGURE: 7 SCALE: 1:1,320 DATE: 7/28/2016

SCALE

1:2,206

LEGEND

May 2016 Soil Sample Location

- Lead Result Below 400 mg/kg
- Lead Result Above 400 mg/kg

Notes:

1.) All soil sample locations depicted with a red icon contained lead sample results greater than 400 milligrams per kilogram (mg/kg). All soil sample locations depicted with a green icon contained lead sample results less than 400 mg/kg.

2.) All soil samples were collected from the on-site tow path.

Figure 8: May 2016 Tow Path Soil Sample Location Map

WURTSBORO LEAD MINE SITE
MAMAKATING, NEW YORK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

In Association With
Scientific and Environmental Associates, Inc., Environmental Compliance Consultants, Inc., Avatar Environmental, LLC, On-Site Environmental, Inc., and Sovereign Consulting, Inc.

GIS ANALYST:	J. BENTON
EPA OSC:	A. CONFORTINI
RST SPM:	M. LANG
PROJECT #:	30400.031.007.3009
FIGURE:	8
REVISION:	0
DATE MODIFIED:	7/28/2016

WESTON SOLUTIONS

\\FSED2\DATA\GISDATA\RST_3\00060114\MXD\160617_MAY2016_TOWPATHSAMPLELOCATIONMAP.MXD

ATTACHMENT E

Public Archaeology Facility Report

CULTURAL RESOURCE SURVEY
2013-2014 HIGHWAY PROGRAM

PHASE 1A CULTURAL RESOURCE ASSESSMENT
DEC SITE #353013
MAMAKATING LEAD MINE
TOWN OF MAMAKATING, SULLIVAN COUNTY,
MCD 10511

BY:

DANIEL SEIB

WITH CONTRIBUTIONS FROM:

MATTHEW KIERSTEAD

SUBMITTED TO:

NEW YORK STATE MUSEUM
STATE EDUCATION DEPARTMENT

OCTOBER 11, 2013

SPONSOR: NYSDEC

Binghamton University, State University of New York
Binghamton, New York 13902-6000

MANAGEMENT SUMMARY

A. PIN/SITE IDENTIFIER: DEC Site #353013, Mamakating Lead Mine

B. PROJECT TYPE: Cultural resource assessment for remediation of lead contaminated soils surrounding the old Mamakating Lead Mine in the Town of Mamakating, Sullivan County, State funding.

C. CULTURAL RESOURCE SURVEY TYPE: Phase 1A Archaeological Assessment

D. LOCATION INFORMATION:

Town: Mamakating
County: Sullivan
MCD: 10511

E. SURVEY AREA:

Total Area: 26.74 ha (66.1 ac)
Total Slope/Untestable Soils: 20.42 ha (50.4 ac)
Total Testable Area: 6.32 ha (15.7 ac)

F. USGS 7.5 MINUTE QUAD MAP: 1969 (photorevised 1976) Wurstboro, NY

G. SENSITIVITY ASSESSMENT:

Prehistoric: High potential for encountering camps and resource processing locations due to the location of the project area near an unnamed tributary of the Basher Kill.
Historic: High probability for early industrial sites based on map documented structures within the project area.

H. RECOMMENDED SURVEY METHODS:

Number of Proposed STPs: 400-475; 100 STPs at 7.5 m (25 ft) intervals, 300-375 at 15 m (50 ft) intervals
Surface Survey: Surface survey to identify and map foundations and features.

K. AUTHOR/INSTITUTION: Daniel C. Seib and Matthew Kierstead/ Public Archaeology Facility, Binghamton University

L. DATE: October 11, 2013

M. SPONSOR: NYSDEC

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ARCHAEOLOGICAL SURVEY

This report presents the results of a Phase 1A cultural resource assessment for DEC Site #353013 Mamakating Lead Mine in the Town of Mamakating, Sullivan County. The goals of this Phase 1A assessment are to conducted background research on the area of potential effect (APE), conduct a walkover of the APE, and generate a sensitivity assessment and field testing plan for the APE. The walkover was conducted July 24 and September 10, 2013.

The assessment summarized in this document was performed under the supervision of Dr. Nina M. Versaggi, Director of the Public Archaeology Facility, Binghamton University. Daniel Seib served as the project director and is author of this report. Field crew consisted of Matthew Lopiccolo. Matthew Kierstead served as industrial historian. Sara Grills generated GIS maps. Maria Pezzuti and Annie Pisani performed all related administrative duties.

In compliance with the New York State Education Department's Work Scope Specifications (2004), the guidelines of the New York Archaeological Council (1994), and the National Park Service's Criteria and Procedures for the Identification of Historic Properties (1990), the APE (Area of Potential Effect) for this project consists of lands adjacent to DEC Site #353013. The results of the research performed for this report do not apply to any territory outside of the APE.

I. PROJECT DESCRIPTION

The DEC Site #353013 Mamakating Lead Mine Project calls for remediation of lead contaminated soils within the Wurstboro Ridge State Forest. The Phase 1A covers a total area of approximately 26.74 ha (66.1 ac) down the western slope of the Shawangunk Mountains within the Wurstboro Ridge State Forest.

II. GENERAL PROJECT AREA

DEC Site #353013 is located in the Town of Mamakating, Sullivan County, New York (Figures 1-2). Figure 2 (p. 3) shows the location of the project area on the 1969 (1976) Wurtsboro, NY USGS topographic quadrangle. The project area consists of two areas on the western slope of the Shawangunk Mountains where historic lead and zinc mining took place. The northern project area encompasses the area where the mines were located and the southern project area encompasses the area where the smelter was located. Both project areas include the area of elevated lead contamination due to historic mining activities. Both contaminated areas are surrounded by 100 ft (30 m) buffers to allow heavy equipment to access the areas. Additional access routes to the project area may need to be added at a later date and may require additional testing. Photos 1-4 (pp. 4-5) show the current land use within the project area, which consists of flat to steeply sloping woods.

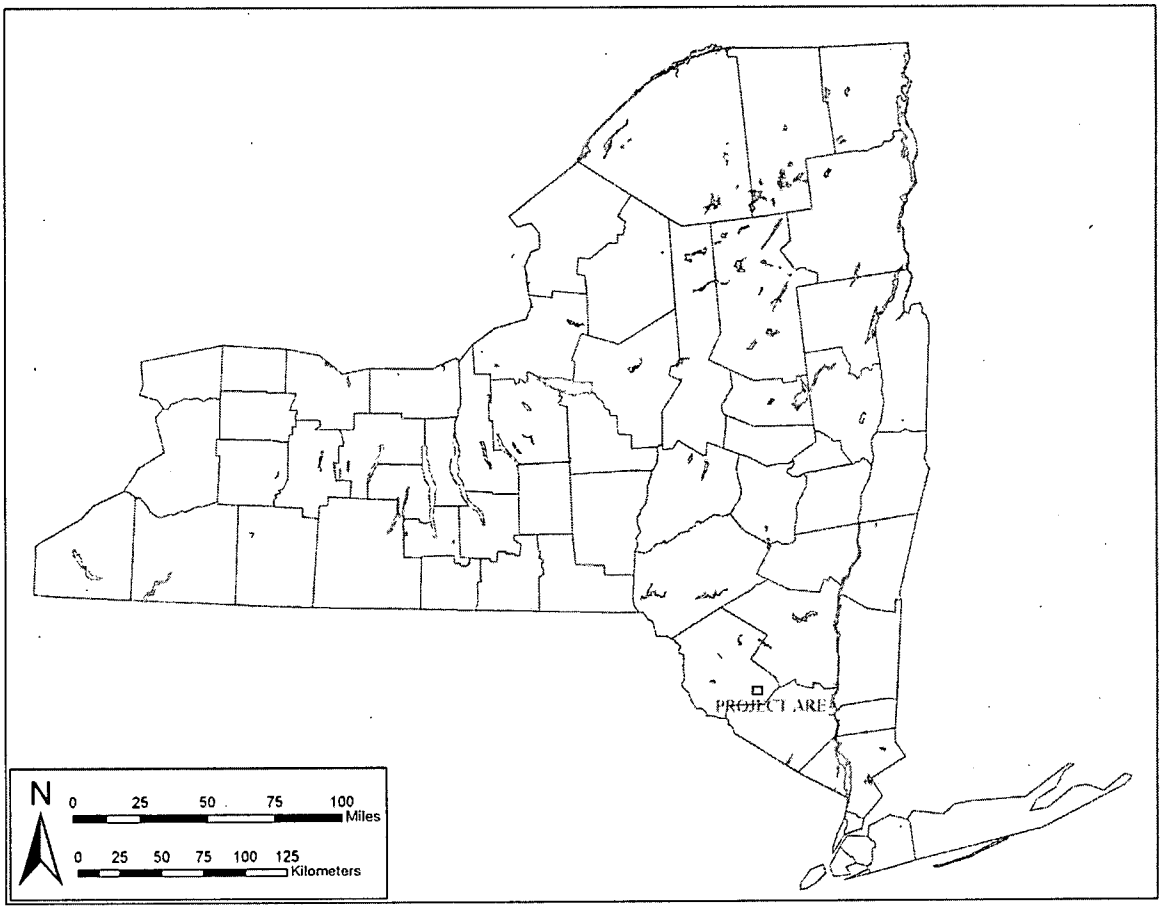

Figure 1. Approximate location of the project area in Sullivan County and New York State.

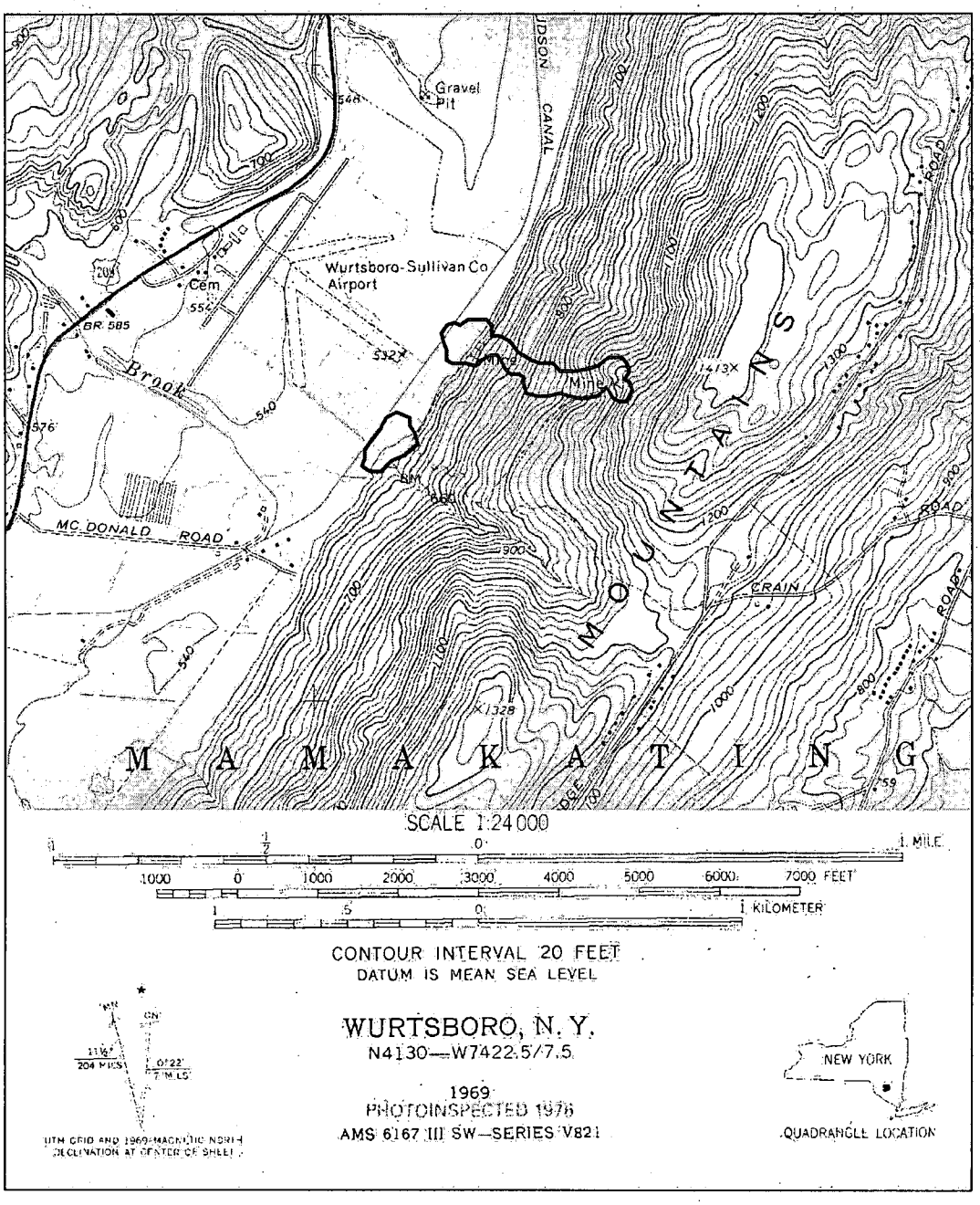

Figure 2. Location of the project areas (in red) on the 1969 (1976) Wurtsboro, NY USGS quadrangle.

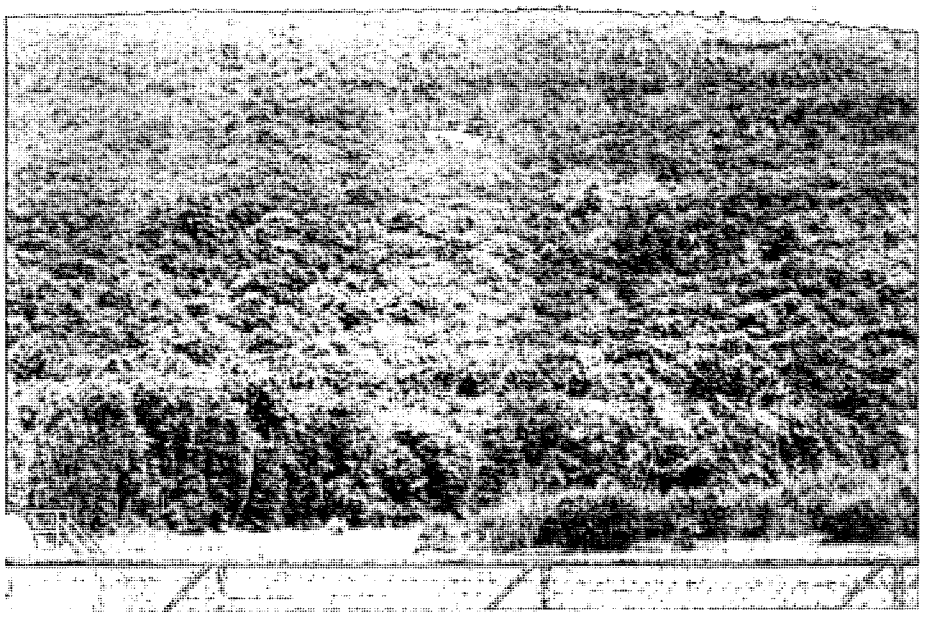

Photo 1. Project area, facing east from NY 209.

Photo 2. Project area, looking north along access road.

Photo 3. Southern portion of the project area, looking north.

Photo 4. View of a flat terrace in eastern half of the northern project area, facing south.

Photo 5. Tailings Pile #1, facing east.

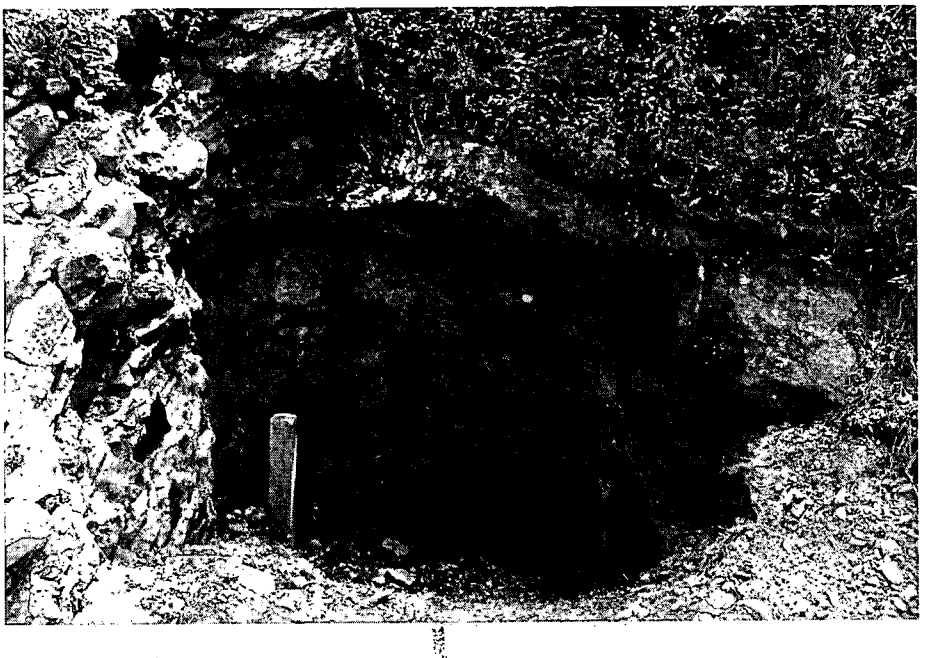

Photo 6. Mine Adit #1, facing east.

Photo 7. Mine car trestle, facing northwest.

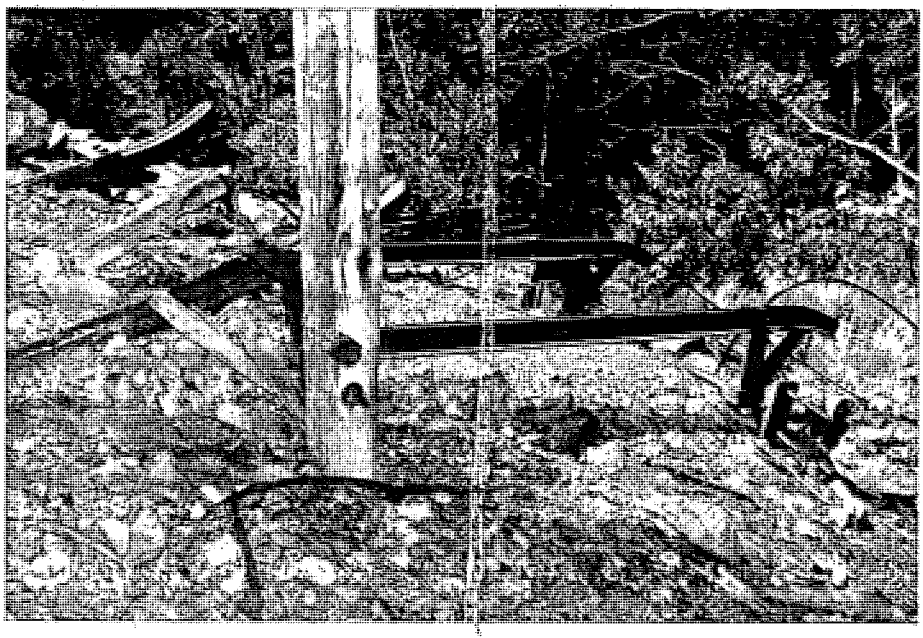

Photo 8. Ore bucket loader, facing southwest.

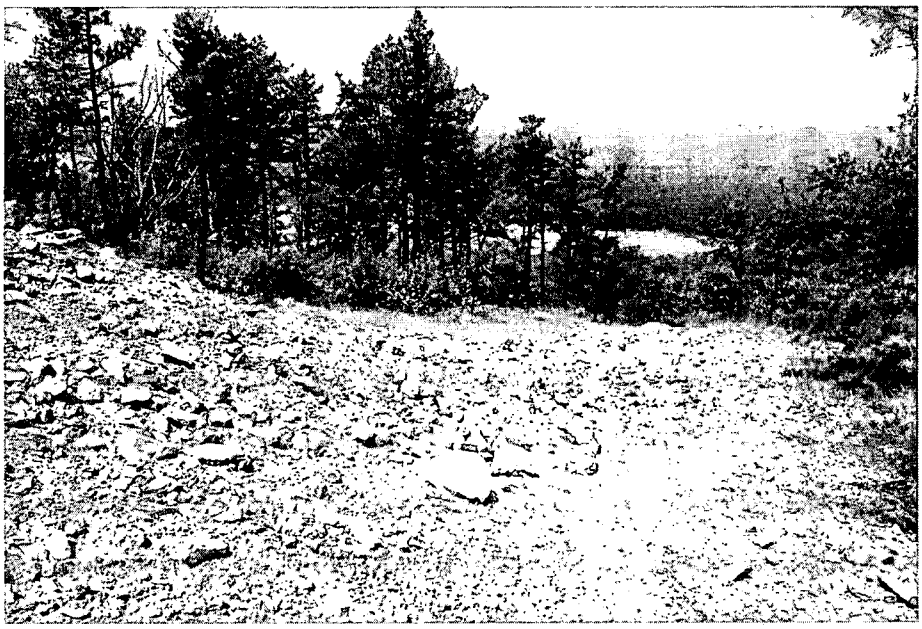

Photo 9. Tailings Pile #2, facing west.

Photo 10. Mine adit #2, facing south.

Photo 11. Tailings Pile #3, facing northeast.

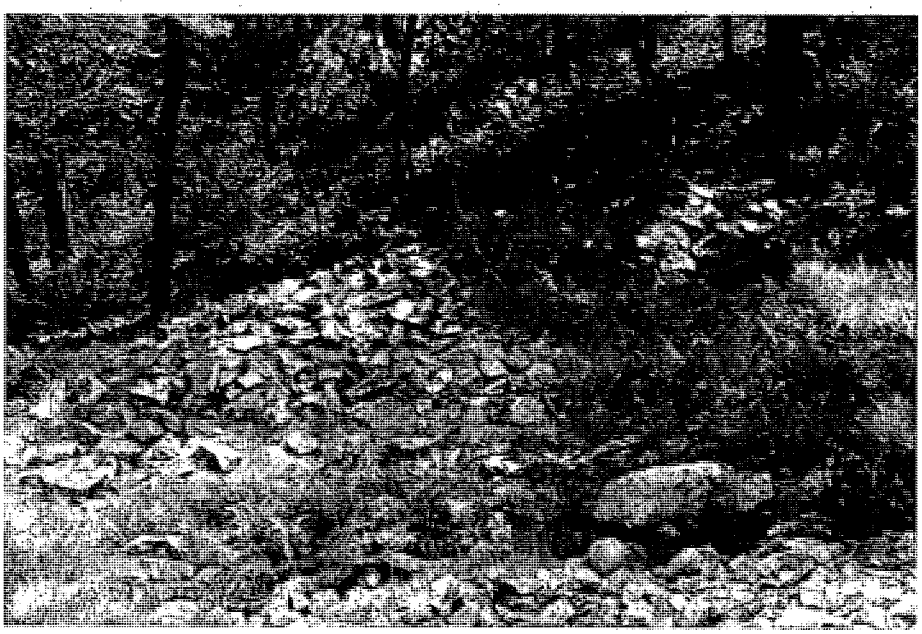

Photo 12. Mine #3 waste rock pile, facing north.

Photo 13. Mine #3 sump, facing east.

Photo 14. Mine adit #3, facing southeast.

Photo 15. A portion of the ca. 1917 zinc mill foundation, facing north.

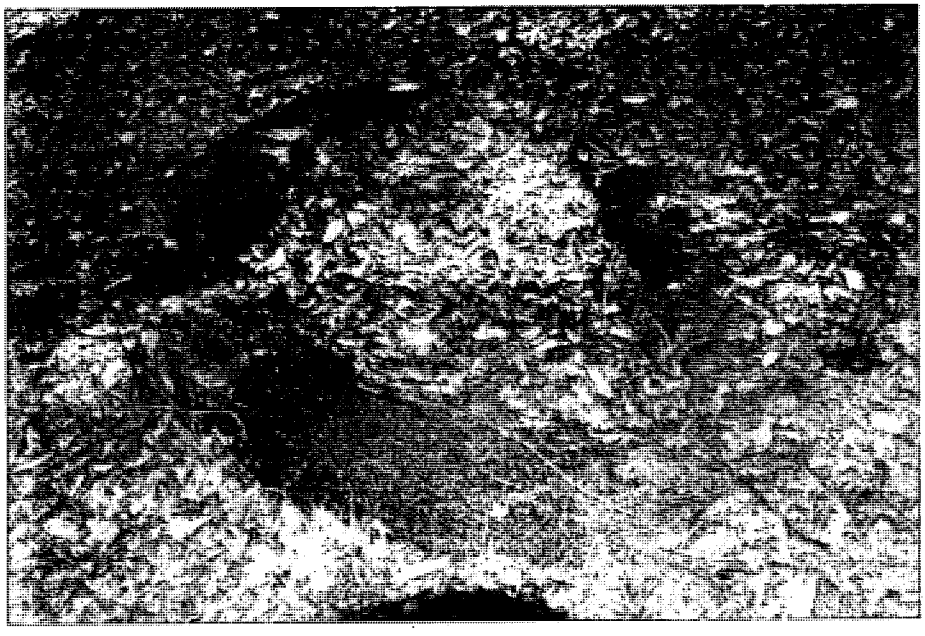

Photo 16. Unknown foundation east of zinc mill foundation, facing north.

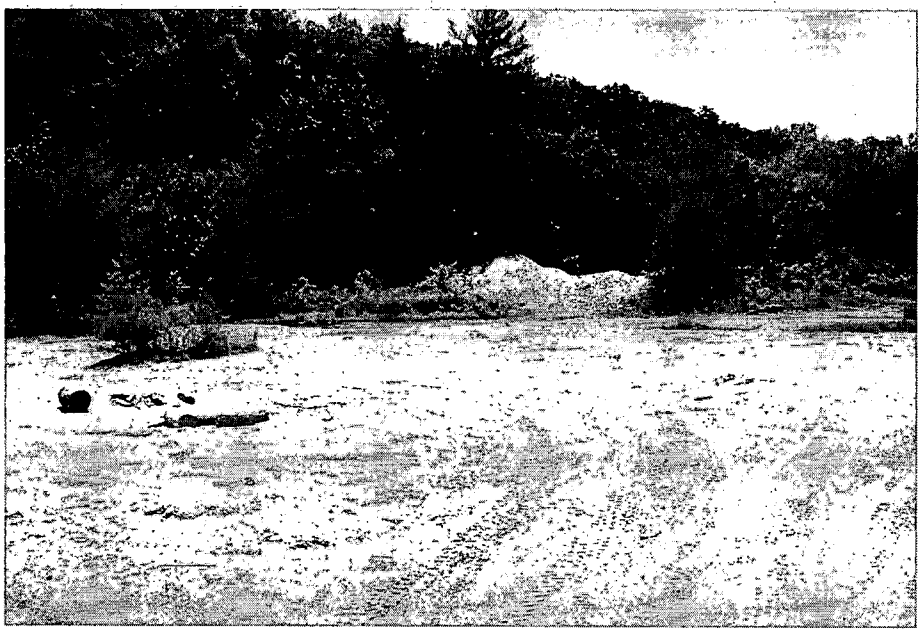

Photo 17. Tailings pile #4, facing south.

Photo 18. Mine adit #4, facing east.

Photo 19. Mine #4 waste rock pile, facing north.

Photo 20. The western edge of the southern project area showing the Delaware and Hudson Canal and eastern towpath, facing north.

III. BACKGROUND RESEARCH

3.1 Site Files Summary (From O'Donovan, Seib, and Carter 2012)

A site files search was conducted at the New York State Museum (NYSM), Office of Parks Recreation and Historic Preservation (OPR&HP), and Public Archaeology Facility (PAF) for a nearby project (O'Donovan et al. 2012). This site file search indicates that there are 13 previously recorded archaeological sites located within a 3.2 km (2 mi) radius of the project area (Appendix II, p. 42). The five known prehistoric sites include one village of unidentified cultural affiliation and four Late Archaic lithic scatters. Historic sites are principally associated with the Delaware and Hudson Canal but include bridges that were intended to connect the lead mine with NY 209. A survey has documented seven standing bridges built for the canal. The remaining historic site is a 19th century dwelling.

Table 2. Site files summary.

Site #/Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
NYSM 4936	Large area, 3,219 m (10,561 ft) southwest of pa/244 m (800 ft) to Basher Kill/159 m (520 ft)/flat	No Information	Village	No Information	Parker 1922 (NYSM map has two locations based on inconsistent ACP description)
10511.000093/ Bridge (D) Site	2,785 m (9,138) ft northeast of pa/244 m (800 ft) to water/155 m (510 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
10511.000092/ Swamp Bridge Site	1,366 m (4,480 ft)/335 m (1100 ft) to water/155 m (510 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
10511.000091/ Lead Factory Bridge Site	1,017 m (3,338 ft) southeast of pa/over Gumaer Brook/162 m (530 ft)/flat	Occupied 1829-98; still in use	Bridge (stone, masonry load bearing walls); Location of bridge built by Delaware and Hudson Canal Company over canal to access Historic Lead Mines. After canal was abandoned, the abutments were lowered to grade level crossing.	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
1-511.000090/ Hornbeck's Bridge Site	1,041 m (3,414 ft) southwest of pa/396 m (1300 ft) to water/162 m (530 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
10511.000089/ Helm's Bridge Site	1,437 m (4,715 ft) southwest of pa/305 m (1000 ft) to water/162 m (530 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
10511.000088/ Masten's Bridge Site	1,684 m (5,526 ft) south of pa/335 m (1100 ft) to water/162 m (530 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
10511.000087/	2,210 m (7,251 ft)	1826; Occupied	Bridge (stone);	Surface 2001	Larson and Associates;

Site #/Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
Youghhousekill Aqueduct Site	southwest of pa/over Youghhousekill Creek/162 m (530 ft)/flat	1828-98	Location of bridge built by Delaware and Hudson Canal Company to carry canal over Youghhousekill Creek; removed after canal abandoned		1865 L.W. Weston Maps
10545.000047/ J. A. Morrison Site	2,941 m (9,650 ft) southwest of pa/600 m (1968 ft) to water/150 m (520 ft)/flat	Built prior to 1856 (on 1856 map) to late 20th century		19 STPs; bottle glass, window glass, bone, staple, bolt, whiteware, cut nails, slate pencil, lamp glass, oyster shell, redware manganese glaze pie plate, medicine bottle, possible auger fragment	Rosentel, Corey 2008
10511.000101/ Kaufman Farms 1 Site	3,266 m (10,714 ft) southwest of pa/183 m (600 ft) to basher Kill/159 m (520 ft)/flat	Late Archaic	No Information	9 STPs; 1 Late Archaic point, 1 dark gray chert non-cortical flake, 1 light gray chert non-cortical flake (heat treated), 1 light gray chert non-cortical flake	Rosentel, Corey 2008
10545.000044/ Kaufman Farms 2 Site	3,036 m (9,961 ft) southwest of pa/298 m (977 ft) to water/159 m (520 ft)/flat	Late Archaic	No Information	41 STPs; 1 Late Archaic point, 2 Onondaga chert non-cortical flake, 1 red jasper non-cortical flake, 1 non-cortical flake (unidentified chert), 1 Onondaga chert core, 1 gray chert cortical flake	Rosentel, Corey 2008
10545.000046/ Kaufman Farms 4 Site	3,181 m (10,436 ft) southwest/262 m (860 ft) to water/159 m (520 ft)/flat	Late Archaic	No Information	44 STPs, 7 1 x 1 m units; 1 Late Archaic point, 2 gray chert cores, 2 cortical flakes, 2 FCR, 9 non-cortical flakes, 5 shatter, 1 shell	Rosentel, Corey 2008

Parker, Arthur C *History of the Archaeology of New York State*, NYS Museum Bulletins 238-239: 1920-22.

3.2 Environmental Context

The project area is within Sullivan County, New York in the Southern New York section of the Appalachian Physiographic province. It is located along the eastern slope of the Shawangunk Mountains and extends down to the edge of the Basher Kill valley. This section of the county principally features soils formed in glacial deposits put down during the Pleistocene period (1.6 million to 12, 000 years ago). The glacial terrain typically consists of somewhat steep hills interspersed with narrow valleys cut by streams. The county is primarily drained by the Delaware River (USDA 1989:2-3). An unnamed tributary creek flows east to west down the Shawangunk Mountains in the southern portion of the project area and feeds into the old Delaware and Hudson Canal, which feeds into the Basher Kill, one of the major drainages in this section of the county. This stream empties into the Neversink River, which reaches the Delaware River at Port Jervis, NY. Elevation in the project area ranges between approximately 165-360 m (540-1180 ft) ASL, with steep slope found throughout much of the project area (Figure 3).

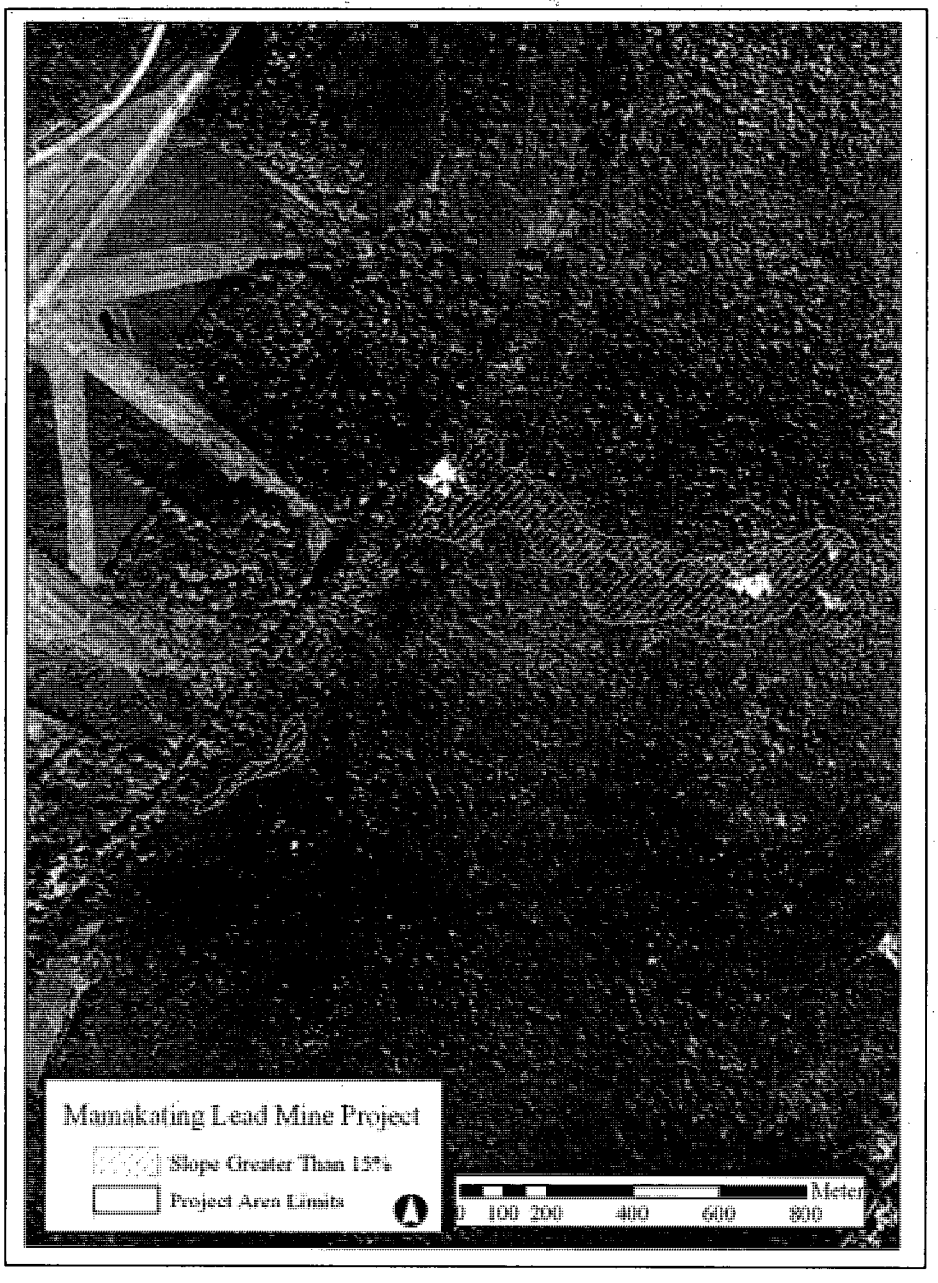

Figure 3. Slope greater than 15% within the project area (project area marked in red).

The USDA soil survey (http://websoilsurvey.nrcs.usda.gov/app/) indicates that the project area is characterized by a variety of soils (Figure 4, Table 1). The primary soils on the hillsides include the Arnot series and the Arnot-Lordstown complex. The Arnot soils are expected to be relatively shallow and steeply sloped, while Arnot-Lordstown soils may be found on gently sloping terraces. Soils found near the base of the mountainside include Alden, Pompton, and Wellsboro/Wurstboro soils which form in less steeply sloping environments. Alden soils have the potential for colluvial deposits and may require deeper testing depending on the specific landform. Carlisle soils, containing poorly drained muck soils over 3.3 ft (1 m) deep are present in the southern portion of the project area and will not require testing. Testing in all soils should extend to a minimum of 15 cm (6 in) into sterile subsoil.

Table 1. Soil descriptions for DEC Site #353013

Series Name	Soil Horizon & Depth	Color & Texture	Slope %	Drainage & Land Form
Alden silt loam (Ad)	**A:** 0-30 cm (0-12 in) **Bg:** 30-84 cm (12-33 in) **2Cg1:** 84-107 cm (33-42 in) **2Cg2:** 107-155 cm (42-61 in)	Black silt silt loam Grey silt loam Brown channery silt loam Reddish grey gravelly silt loam	0-3%	Very deep, very poorly drained soils formed in silty colluvium over glacial till.
Arnot-Lordstown complex (AlE=15-35% slopes)	**Oi:** 9-8 cm (3.5-3 in) **Oe:** 8-0 cm (3-0 in) **E:** 0-8 cm (0-3 in) **Bw1:** 8-28 cm (3-11 in) **Bw2:** 28-43 cm (11-17 in) **BC:** 43-64 cm (17-25 in) **R:** 64+ cm (25+ in)	Dark reddish brown humic layer Black humic layer Brown silt loam Dark brown channery loam Brown channery loam Brown and yellowish brown channery loam Gray sandstone	15-35%	Moderately deep, well drained soils formed in glacial till.
Arnot-rock outcrop complex (ArE=15-35% slopes, ArF=35-70% slopes)	**Oe:** 3-0 cm (1-0 in) **A:** 0-5 cm (0-2 in) **Bw1:** 5-18 cm (2-7 in) **Bw2:** 18-41 cm (7-16 in) **R:** 41+ cm (16+ in)	Dark brown humic layer Dark greyish brown channery loam Brownish yellow very channery loam Yellowish brown very channery loam Light grey sandstone with some quartz	15-35% 34-70%	Shallow, somewhat excessively drained soils formed in glacial till.
Carlisle muck (Ca)	**Oa1:** 0-30 cm (0-12 in) **Bw1:** 30-53 cm (12-21 in) **Bw2:** 53-102 cm (21-40 in) **BC:** 102-168 cm (40-66 in)	Black muck Black muck Dark reddish brown and black muck Dark reddish brown muck	0-2%	Very deep, very poorly drained soils in depressional areas, bogs, and marshes on outwash plains and till plains.
Pompton gravelly fine sandy loam (PmB=3-8% slopes)	**Ap:** 0-25 cm (0-10 in) **Bw1:** 25-46 cm (10-18 in) **Bw2:** 46-56 cm (18-22 in) **Bw3:** 56-76 cm (22-30 in) **2C:** 76-152 cm (30-60 in)	Brown gravelly fine sandy loam Yellowish brown gravelly sandy loam Yellowish brown gravelly sandy loam Strong brown sandy loam Yellowish brown gravelly sand	3-8%	Very deep, moderately well drained to somewhat poorly drained soils formed in glacial outwash.
Swartswood and Lackawanna soils (SwE)	**Oi:** 5-0 cm (2-0 in) **A:** 0-3 cm (0-1 in) **BA:** 3-8 cm (1-3 in) **Bw1:** 8-25 cm (3-10 in) **Bw2:** 25-56 cm (10-22 in) **E:** 56-66 cm (22-26 in) **Bx:** 66-152 cm (26-60 in)	Black humic layer Dark reddish brown gravelly loam Dark brown loam Dark brown loam Reddish brown gravelly sandy loam Reddish/light reddish brown gravelly loam Reddish brown gravelly sandy loam	3-50%	Very deep, well drained soils formed in glacial till.
Wellsboro and Wurstboro soils (WlC)	**Ap:** 0-20 cm (0-8 in) **Bw1:** 20-30 cm (8-12 in) **Bw2:** 30-51 cm (12-20 in) **BX:** 51-76 cm (20-30 in)	Dark reddish brown gravelly loam Reddish brown loam Reddish brown gravelly loam Reddish brown gravelly loam	0-15%	Very deep, moderately well drained soils formed in glacial till.

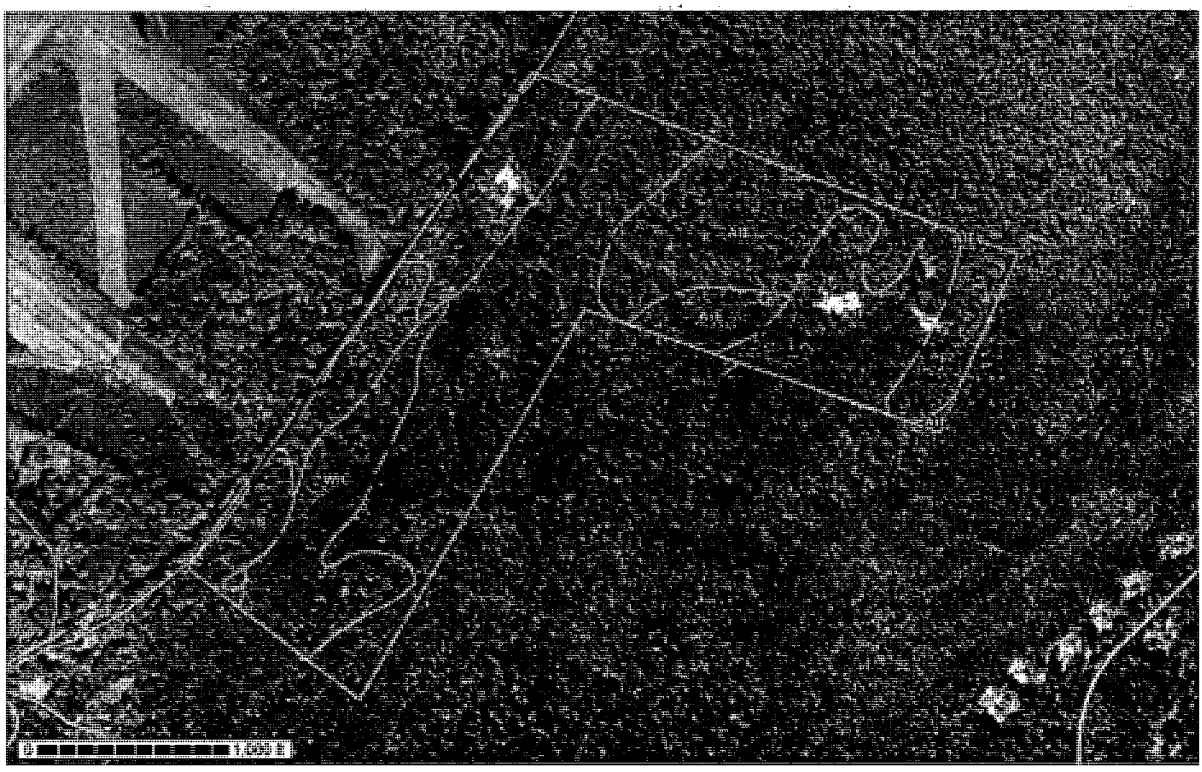

Figure 4. USDA soil map (project area marked in red).
Key: Ad=Alden silt loam; AlE=Arnot-Lordstown complex (15-35% slopes); ArE Arnot-rock outcrop complex (15-35% slopes); ArF Arnot-rock outcrop complex (35-70% slopes); Ca=Carlisle muck; PmB=Pompton gravelly fine sandy loam (3-8% slopes); SwE=Swartswood and Lackawanna soils; WlC=Wellsboro and Wurstboro soils; W=Water.

3.3 Prehistoric Context

The prehistory of New York State and the Northeast was characterized by two broad subsistence patterns, both of which influenced settlement and land use patterns, as well as material culture. The first, designated as the pre-agricultural hunter-gatherer, began with the arrival of highly mobile groups during the Paleo-Indian and Early-Middle Archaic periods around 10,000-4000 BC. Few Paleo-Indian sites have been recorded in the Upper Hudson Valley region (Funk 1976; Ritchie 1980:4-5; Ritchie and Funk 1973). Mobility was an important adaptation, as these groups relied on gathered plants, game animals, and fish for their subsistence. These groups often trailed herds of animals, or migrated from one resource-rich landform (e.g., upland wetlands) to another. These groups were followed by seasonally nomadic hunter gatherers during the Late Archaic through Middle Woodland periods (4000 BC- AD 900), who flourished in the region until the advent of early agriculture in the Late Woodland periods (AD 900-1650). It was during this mobile hunter/gatherer period that human groups relied almost solely on gathered plant resources, fish, and game animals for daily subsistence. Hunting and gathering continued to be an important part of the subsistence base during the later agricultural period, but a large part of the daily subsistence was increasingly shifted toward the production and consumption of the maize-beans-squash complex. This subsistence shift led to the development of larger and more sedentary human populations, and the subsequent construction of hamlet and village settlements near agricultural fields.

Prehistoric land use during the Late Archaic, Transitional, Early Woodland, and early portions of the Middle Woodland phases of the pre-agricultural period was based on a logistically organized system where seasonal base camps were established in major river and lake valleys near confluences. This type of logistical organization along with seasonal aggregation and dispersal created a variety of site types ranging from large residential camps, to small special purpose camps, to resource processing locations (Versaggi 1996). Prior to the Late Archaic, the limited number of prehistoric groups in central New York foraged on a fairly irregular basis, following the migration of animal herds and

flocks, or moving from scattered resource-rich landforms (e.g., upland wetlands). Seasonal occupation of camps was likely a major aspect of this period, with numerous sites noted on lakes and major Hudson River tributaries (Funk 1976:252). It was during the late Middle Woodland that the population of the Northeast began to expand and some of the settlement patterns characteristic of the Late Woodland started to emerge. Late Woodland cultures are characterized by the adoption of horticulture based on maize, beans, and squash and the development of relatively large villages occupied year round. Within the Hudson Valley, there is serious debate about the introduction of and reliance on maize agriculture during the Late Woodland. Recent research (Brumbach and Bender 2002:230-233) suggests that a dependence on maize never occurred and that intensive fishing at productive confluence areas was the factor most responsible for a less mobile settlement strategy. Village sites were selected first for fishing, and secondly for soils that would support cultivated plants. According to this model, large nucleated villages, such as were present during the maize-dependent Owasco, should not be expected. Village plans reflect the development of the matrilineal kin groups characteristic of ethnohistoric groups and differentiation in size between descent groups. Villages are generally located on high terraces and knolls, rather than near drainage basins and waterways. The typical village settings indicate an increased need for defense, prompting many groups to develop their villages on elevated landforms situated above major waterways.

Beginning around AD 900, the Late Woodland period is defined by the widespread shift towards agriculture as a subsistence base, along with the associated sedentism necessary for agricultural pursuits. While these groups continued to forage for plant and animal resources, they relied heavily on cultigens as a primary food source. Permanent villages developed in the region, along with a matrilineal kin structure. Increased needs for defense

Research by Versaggi (1996) recognizes four site groupings that can be employed in an examination of hunter-gatherer sites: base-camps, single-task field camps, multi-task field camps, and resource processing stations.

- **Base-camps** are large sites with high frequencies of artifacts, tools, features, and spatial clusters. Base-camps were typically located at confluences near winter deer aggregation areas and dense spring fish runs.

- **Single-task field camps** are typically smaller size occupations that contain large numbers of artifacts and specialized tools. Bifacial reduction debitage is prominent as bifacial tool-kits are replaced and maintained. Single-task temporary camps appear to have been occupied by few people for a short duration, and there may have been little need to organize and divide space. Fewer spatial clusters would result and these would tend to be similar in composition, reflecting a focus on a single or limited range of tasks.

- **Multi-task field camps** are typically smaller size occupations that contain lower numbers of artifacts and tools. These sites resemble forager-like camps in which the occupants moved frequently in pursuit of low density and dispersed resources. Multi-task camps occur in a wide variety of contexts. Some were widely scattered within the valleys of major and secondary drainages, and others were mapped onto specific resource patches in the uplands.

- **Resource processing locations** and encounter-like hunting/butchering stations are small occupations with very low numbers of artifacts, tools, and spatial clusters. Expedient flake production and use characterize these small lithic sites. Generally, these sites are expected within the daily foraging radius around a camp or village, as well as around dispersed single- and multi-task camps.

Prehistoric Sensitivity Assessment

The physiographic setting of the APE on a tributary of the Basher Kill is a highly sensitive locale for resource processing stations and small camps from all prehistoric time periods. Most of the known prehistoric sites within the vicinity of the project area are small lithic scatters dating to the Late Archaic period. They are located closer to the Basher Kill and indicate that this was an important resource processing and procurement area. Located on a slope stretching into the upland and in close proximity to the Basher Kill, the project area would have been a prime locale for game and aquatic resources for populations exploiting this valley. Local history says that Native groups may have used the mines, and in doing so may have set up campsites on one of the upper terraces near the entrances.

3.4 Historic Context

The project area lies within the Minisink Patent (1704), which encompasses the southern portion of Sullivan County (http://www.sullivancountyhistory.org; Eisenstadt 2005: 1503-506). Native American groups who used the area that became southeastern Sullivan County included the Delaware Munsee (Lenape). By about 1730, the Delaware Munsee were pushed out of the region through the combined factors of Euro-American encroachment, conflict with the neighboring Haudenosaunee (Iroquois), and the impact of European diseases.

The project area is located within the Town of Mamakating. Founded in 1788, Mamakating was the original town in Sullivan County and included the entire county within its precincts in the 18th century. Early Euro-American presence in the town was supported by three forts, which were part of a line stretching along US 209, or the old mine road. Some attempts were made to mine lead in this area but they were fairly limited in economic impact. The Delaware and Hudson Canal and later the New York, Ontario, and Western railroad (1872) ran along the valley of the Basher Kill through the town. These two transportation arteries brought Mamakating into regional economic developments, including tanning and tourism (http://www.sullivancountyhistory.org). However, Mamakating was, and remains, largely rural and agricultural.

Euro-American settlement remained sparse in the region until after the Revolutionary War. Completion of the Newburg and Cohecton Turnpike connecting the Hudson River with the Delaware River in 1808 led to a substantial increase in in-migration. However, the most significant early improvement in terms of growth and economic development was the Delaware and Hudson Canal. ~~The canal, which was opened in 1828,~~ followed a similar route as the turnpike, and connected the region to the bustling market of New York City(http://www.sullivancounty history.org; Eisenstadt 2005: 1503-1506).

The Delaware and Hudson Canal not only brought goods from New York City into the area, it also allowed a whole industry to blossom. The cheap transportation cost of bulk goods on the canal enabled the development of a local tanning industry. The tanning industry reached its peak during the Civil War with the great demand for leather boots, belts, and other uniform items but was virtually non-existent less than two decades later (Eisenstadt 2005:1503-1506; http://www.sullivancountyhistory.org).

A new service industry arose during the late 19th century that compensated somewhat for the waning tanning and lumbering industries. The Catskill Mountains had been a tourist destination since the early 19th century when it was a stop on the American version of the "Grand Tour". In the 1850s to 1870s, the region was connected by a network of railroads to New York City, which made the mountains more accessible to middle-class tourists looking for a rural antidote to their lives in the city. The region was heavily promoted as a tourist destination by the railroads and hotels and boarding houses sprung up to cater to this demand. However, the greatest period of tourism in the mountains was when they became the "Borscht Belt" during the early 20th century (O'Donovan 2011; Eisenstadt 2005:1503-1506; http://www.sullivancounty history.org).

Tourism, particularly hunting and fly fishing, are still an important cornerstone of the economy, along with other economic pursuits that have sustained the region since the 19th century, including agriculture, lumbering, and bluestone quarrying (http://www.sullivancountyhistory.org; Eisenstadt 2005:1503-1506).

Wurstboro Mine History (by Matthew Kierstead)

The Wurtsboro Mine was a component of the larger Shawangunk Mining District, a 30-mile long belt of small historic lead-zinc mines located along the west flank of Shawangunk Mountain in New York. From north to south, the District included three economically producing mines at three separate locations: the Ulster Mine at Ellenville, Ulster County; the Wurtsboro (Mamakating) Mine at Mamakating, Sullivan County; and the Guymard Mine at Mount Hope, Orange County. This District included several other small mines, prospects and exploratory shafts and tunnels, particularly in the Ellenville vicinity. ~~The Wurtsboro Mine was also known by several corporate names including, chronologically, the Sullivan Mine, New York & Montgomery Mine, New York & Shawangunk Mine, New York Zinc Mine, Saint Nicholas Zinc Mine, and Shawangunk Minerals Mine.~~

The Wurtsboro Mine was worked intermittently for lead from the late 1830s into the mid-1850s, and for zinc during World War I and again in the early 1960s. The Shawangunk District mines, with some exceptions, all operated in a series of contemporaneous pulses from the early nineteenth to the mid-twentieth centuries as demands for lead, then zinc, and the technology for extracting them, changed and evolved. Geology also played a role in Shawangunk District mine development. All of the mines reported distinct vertical ore zoning, with lead ore (galena (lead sulfide)) predominating closer to the surface, which was worked earlier, when lead was in demand and there was little if any market for zinc. As mining progressed deeper, zinc ore (sphalerite (lead sulfide)) predominated over lead and forced the mines to close at the middle of the nineteenth century. Industrial demand for zinc at beginning of the twentieth century prompted the mines to reopen and mining progressed deeper into the deposits and ore was treated with new technology. The irregular, mixed lead-zinc Shawangunk ore, however, proved chronically difficult to separate. The economic and technological trajectory of the Wurtsboro Mine was aptly summarized by the U.S. Bureau of mines, which reported in 1950, "Difficulty in effecting mechanical separation of sphalerite and galena was the primary reason for abandonment by various operators" (Eilertsen 1950:3).

None of the Shawangunk District mines were major producers compared to some other larger Appalachian lead or zinc mines. They are of historical interest and significance for the ways in which their development patterns mirror those of Appalachian metal exploration, mining and refining in general across two centuries, as well as their place in the narrower contexts of the early development of New York, Appalachian and U.S. lead and zinc industries.

The early history of the Shawangunk District mines includes disputed local folklore and legend surrounding the involvement of seventeenth-century Dutch settlers as well as allegations of Native American knowledge and utilization of the mineral outcrops. Recent scholarship appears to have disproved some of this folklore (Chavez and Clemensen 1995: 27-30; Kraft 1996:150-157).

The Dutch and the "Old Mine Road"

The long, contiguous valleys of the Neversink River, Bashakill and Rondout Creek on the west side of Shawangunk Mountain between Port Jervis and Kingston, New York have been the axis of important regional transportation routes between the Delaware and Hudson rivers for centuries. The route is understood to have been a Lenape Native American footpath, and was improved as a primitive cart path by European settlers by 1715. In 1828 the valley became the route of the Delaware & Hudson (D&H) Canal, which carried Pennsylvania anthracite coal to New York City via the Hudson River at Kingston, New York until 1899. Wurtsboro is named for founding canal company officers Maurice and William Wurts. In the 1870s the valley became the route for branch lines of the New York, Ontario & Western Railway (O&W) serving Kingston, Monticello and Port Jervis, New York. The O&W Cornwall-Oswego, New York Main Line and Port Jervis Branch rights-of-way run through the Wurtsboro Mine site, as does the D&H Canal. Today, New York State Route 209 parallels these historic transportation routes (Chavez and Clemensen 1995: 27-30).

Local historical accounts claim that Route 209 more or less follows the route of an "Old Dutch Mine Road," allegedly constructed by Dutch settlers in the 1650s to haul copper ore from mines at Pahaquarry, New Jersey, near the Delaware Water Gap to the Hudson River at Esopus (Kingston), where the Dutch had a trading post by 1615. Recent research has largely succeeded in disproving the idea that large bands of Dutch laborers built an improved road capable of carrying sturdy wooden carts laden with heavy, extremely low-grade, refractory (hard to smelt) copper ore 104 miles through then-recently hostile Native American territory for costly ocean transport to the Netherlands for refining into small quantities of metal. No documentation for Dutch mining at Pahaquarry has been found. The legend of the "Old Mine Road" appears to stem from misinterpretation of letters by a Samuel Preston published in *Hazard's Register* in 1828 containing references to earlier oral histories with conflicting dates and vague references to the Dutch and area mining. Subsequent research into and misunderstandings of the records of the Dutch West India Company apparently further confused the history (Chavez and Clemensen 1995: 27-30).

Revision of the "Old Mine Road" history focused on the legend of Dutch copper mining at Pahaquarry, however, discovery of at least one of the Shawangunk District ore outcrops by Dutch explorers cannot be entirely ruled out. Local history tells of a company of miners from Holland that worked two mines, one at Pahaquarry Flat, and the other on the same (Shawangunk) mountain, about half way between the Delaware River and Esopus. That would place that activity somewhere in the Wurtsboro/Spring Glen/Ellenville vicinity. According to the records of the Dutch West India Company, in 1659 a sample of copper ore was sent from the New Netherlands to Holland. Explorer Clayes De

Reuyter claimed the ore was found in a "crystal mountain" that lay between the Manhattan Native American bands, part of the Wappinger Confederacy that reached north of Kingston, and the South (Delaware) River. All of the Shawangunk District mines are located in or near the bright white Shawangunk quartzite formation ridge which is visible for miles. The mines at Ellenville, New York were the only ones containing significant amounts of copper ore and were renowned for their large clusters of clear quartz crystals (Chavez and Clemensen 1995: 27-30, Hine 1909: 7-8).

Native Americans and The Shawangunk Mines

Apocryphal stories of Native American knowledge or use of deposits of lead and silver were recounted by Charles G. Hine in his history of the route of the "Old Mine Road." According to Hine, the area between Westbrookville and Hugenot, the area of the Guymard Mine, contained a "lost silver mine" known during the Revolutionary War. A twelve-year-old boy was allegedly lowered into the mine by an Indian chief to see a vein of pure silver, but was blindfolded to conceal the exact location. Hine reported a mine, possibly crudely worked by Native Americans before Dutch arrival, close to the D&H Canal lock in Ellenville. Hine also reported that Native Americans were believed to have mined lead from Shawangunk rocks near Wurtsboro, and held the location a close secret from settlers (Antisell 1873: 30; Hine 1909: 85-86, 91, 111, 119-120).

Accounts of pre-contact period Native American metallic ore smelting (thermochemical release of semi-pure metal from host ore) are unconfirmed. Native copper from Michigan, which required no smelting, was traded throughout the eastern North America. Crude lead can be inefficiently melted out of galena-bearing rocks and it is possible Native Americans learned that through accidental encounter and subsequent trial and error. Lead, however, is very soft and has little practical application outside of ornament. Post-contact Native American lead smelting became part of a trade economy where the technology was transferred. French fur trappers near Dubuque, IA in the 1650s allegedly taught the Fox Indians to smelt local lead ores in crude, inefficient stone hearths to make lead for bullets. The Sac and Fox tribes were certainly making lead between the late eighteenth century and the Black Hawk War in 1832. In the Shawangunks, the extent or type of lead use by Native Americans is unknown, but their knowledge of the deposits seems likely, and natural oxidation on the outcrops may have simply served as sources of litharge (red lead) for pigment if not true smelted metallic lead (Hazen & Hazen 1985:148-149).

Wurtsboro Mine Discovery

According to local folklore, Native Americans were aware of a lead ore outcrop on Shawangunk Mountain northeast of Wurtsboro. It is unclear how they used the lead ore but they kept its location a closely-guarded secret and threatened any one who followed them to it with death. Reportedly a hunter named Miller stumbled onto the Indians at their lead "mine" during the eighteenth century but kept the location a secret. The information was passed on until 1817 when the ore was assayed and declared valuable. Local speculators apparently had difficulty obtaining title to the property, the location of which they kept secret until 1836 when one partner, Moses Stanton, allegedly divulged the location in his sleep to his son, who identified the property and its owners and received a reward (Hine 1909:111).

Sullivan Mining Company, 1837

Regardless of the veracity of the discovery tale, a mining patent was taken out on the farm of a Timothy Godfrey in Mamakating in 1835, and the ore was tested and said to contain silver and gold and possibly copper. Mining at the "Shawangunk Mine" began under the Sullivan Mining Company (Niles Weekly Register 1835:157; New York Zinc Company 1852:1-9).

In 1837, geologist William W. Mather visited the mine and reported that a shaft had been sunk near the ridge but stopped when the ore pinched out after about 9 m (30 ft). A second, vertical shaft was sunk nearby and horizontal drifts (tunnels) excavated north and south along the strike (trend) of the ore. Two adits (horizontal access and drainage tunnels) were also driven on the deposit. Mather reported that ore was being taken out the lower adit, picked (upgraded by hand), washed of fines and dirt, and sent via a winding road about one mile long to a "smelting house" on the banks of the D&H Canal. Although Mather observed masses of galena weighing 800, 1,000 and 1,400 lbs being removed from the mine, he also cited the apparent disadvantages of the irregularity of the ore and its intimate mixture of galena and zinc ore "blende" with lots of silica gangue (quartz waste rock). Mather also noted, but did not describe, the unsuccessful methods the company was using to separate the lead and zinc (Mather 1843:360-362).

New York & Montgomery Mining Company, New York & Shawangunk Mining Company, 1838-1854

In 1838, two separate acts were passed to incorporate two different mining companies for the Wurtsboro Mine, the New York & Montgomery Mining Company and the New York & Shawangunk Mining Company. The mine was then known as the "Montgomery Mine." In 1840 a survey map of the mine site was made that showed the underground workings in plan and section as well as the locations of at least eighteen buildings between the mine, smelter and D&H Canal. The mine was actively engaged in digging and smelting ore and employed 100 men (*Family Magazine* 1840: 82; State of New York, 1859, p.418; Hits 1840; Antisell 1873:30)

In 1843 William Mather reported that the New York & Montgomery Mining Company had improved their lead-zinc ore separation problems by finely crushing the ore and passing it through shaking washing tables with screens of increasing fineness. This apparently improved galena-sphalerite separation and also removed most of the silica gangue so the ore could be more successfully smelted. Mather noted that the future of the mine depended on the quantity of ore and the expense and success of lead-zinc separation. Mather acknowledged that zinc ore in the mine exceeded the lead ore, and that the quantity of potentially valuable silver in the ore was miniscule. Mather also predicted the eventual need for a much deeper adit at the bottom of the mountain to reach projected deeper ore. He incorrectly predicted that the proportion of lead in the ore would increase with depth. The vertical extent of underground workings and the shaft and adit access points were all essentially complete by 1843. The most detailed explanation and diagrams of the various mine openings, their history and their relationships to the underground workings was presented by the U.S. Bureau of Mines in 1950 (Eilertsen 1950:9-11; Mather 1843:360-362).

At some point after 1843, mining and smelting stopped. In 1848 another company associated with the mine, the New York Zinc Company, was incorporated with $500,000 of stock. In 1851 the mine reportedly opened again under the original New York & Montgomery Mining Company and set out to make to make zinc and lead oxide, sulfuric acid, cobalt, silver and other products from the ore. The goals and the methods of the operation appear to have changed to take advantage of emerging methods of zinc separation and processing as well as to employ what were then called "humid" or "moist" methods of ore manipulation involving chemical processes to separate and realize all the potential values and products trapped in complex ores. The practice of what is now called "hydrometallurgy" was then in its infancy. Many financially and technically troubled mining companies tried convince stockholders and investors to put their faith and money into questionable "humid" processes and equipment that had only been tested at the laboratory scale, and not in actual manufacturing (New York Zinc Company 1852:1-9; Whitney 1854:347-348).

The mid-nineteenth century metallurgical "process mania" phenomenon was clearly in action at the Wurtsboro Mine. In 1852 the New York and Montgomery Mining Company and New York Zinc Company both issued reports containing expert testimony from teams of geologists, chemists and mining engineers extolling the virtues of proposed new metallurgical processes and the richness of the ore deposit. The New York and Montgomery Mining Company experts presented patent processes to extract all the values in ore, described proposed enlargement and alteration to the smelting works, and made rosy profit projections. The report stated that there were 40,000 to 60,000 tons of mined ore on hand as of October 1852. This conflicted with an independent geologist's report made a few months earlier that stated there were perhaps 70 tons of mined ore and no mining taking place. The Company geologist claimed the mine still contained vast quantities of ore. The New York Zinc Company's August 1852 report was similar, invoking recent chemical discoveries that would effect direct reduction of lead and zinc ores (Antisell 1873: 32; New York and Montgomery Mining Company 1852 1-8; New York Zinc Company 1852:1-9).

Geologist Thomas Antisell reported unfavorably on conditions at the mine in 1852. According to him, the gangue in the ore deposit made it too poor to work in places. Little ore had been raised since 1846 and areas of the mine were filled with water. There was little draining or blasting going on. New smelting furnaces were being erected at great cost and the magnitude of effort being expended on new equipment seemed out of proportion with the ore that had been mined or that was available in the mine. The intimately mixed iron-rich zinc ore and lead ore was inferior to European or New Jersey counterparts and did not contain enough silver to make it profitable. The difficulty in separating them meant that the lead was wasted to obtain the zinc and vice-versa. Antisell warned of unethical efforts being made to inflate the true mineral wealth of the Shawangunk District. Referring to the New York and Montgomery Mining Company's pamphlet, he reinforced that the chemist Seymour's process had never been tested on a production scale, that assay figures for metal percentages in the ore appeared inflated, and that it would be impossible to cover construction or operation expenses for the new plant using the proposed processes. Antisell reported that the Company had been

smelting ore and chemically decomposing it and making a few combined tons of zinc oxide, zinc chloride, lead chromate and cobalt per week, and shipping it to New York City to keep stock prices up and facilitate ongoing sales. He characterized the operation as unsustainable and predicted its imminent demise (Antisell 1873:30, 33-35).

In 1853, the 1838 act of incorporation for the New York and Montgomery Mining Company was amended. In 1854 the mine was referred to as the Montgomery Zinc Mine and was reportedly the only mine in New York worked specifically for zinc, and that the percentage of zinc in the ore made the mine worthless as a source of lead. At some point soon after the mine closed (State of New York 1859:418; Whitney 1854:347-348).

A large and critical gap exists in the known historical record for the Wurtsboro Mine after 1854. A reference to the mine appears in court testimony from 1864 and indicates that a "D. [*sic,* actually "A" (August)] F.W. Partz" of Wurtsboro had been mine superintendant since August or September of 1862 and had visited the mine previous to that time. U.S. Patent application records from 1864 also show that in that year, August F.W. Partz of Wurtsboro obtained a patent for a device for roasting sulfide ores, consisting of a shaft furnace with alternating inclined planes over which powdered ore cascaded while exposed to high heat to drive off sulfur. The importance of roasting metallic sulfide ores preparatory to smelting was the subject of much research and equipment development after the Civil War. The separation of zinc, and generation of zinc oxide both require roasting, and Partz's patent suggests that if zinc mining was not actually taking place at Wurtsboro, perhaps the smelter building was being used as a metallurgical laboratory of sorts after mining and smelting ceased at some point, perhaps by 1857 or earlier. The smelter plant at the Silver Hill Mine in North Carolina was used for lead-zinc ore metallurgical experiments between the 1840s and 1870s (Kaas 2009:33-36). August Partz was a German chemist knowledgeable in the aniline dye industry and was attempting to establish chemical works in the New York City area in the 1860s. He was an assistant editor for *Mining Magazine* in the early 1850s and author of numerous geological reports on eastern U.S. mines (State of New York 1864:880; Commissioner of Patents, 1864:561; Nguyen 2007:79).

St. Nicholas Zinc Company, 1917-1918

The Wurtsboro Mine was inactive for about 60 years until it was reopened in 1917 in a spate of U.S. metal mine re-openings associated with rising prices for metals for World War I. The mine was rehabilitated by the St. Nicholas Zinc Company, incorporated in Delaware. In April 1917 the company constructed a 100 ton-per-day (TPD) mechanical concentrating mill at a point at the bottom of the mountain closest to the mine. The company planned to mill all ore in sight for both lead and zinc concentrates and carry on exploration for additional supplies in and around the existing mine workings. It is not known if mine personnel lived on site or were lodged in the surrounding area. The company extended the underground drifts and removed ore previously left in the mine. Ore was transported down the mountain via a 1,600 foot long aerial cable tramway that ran over pulleys on towers, carrying the ore in buckets. This technology was invented in the U.S. by Andrew S. Hallidie in 1871. With technological improvements and variations it became a standard method of transporting minerals over long distances. There were few examples erected in New York, perhaps most notably the tramway at the Solvay Process Company limestone quarry in Jamestown, New York. The Wurtsboro lead-zinc ore was dumped into an ore bin at the concentration mill, crushed into small pieces in a Blake-type jaw crusher, ground with water to sandy consistency in a Hardinge-type ball mill in closed circuit with a classifier, and run over Wilfley-type shaking tables. The latter act upon the same principle of hindered settling as a gold pan to separate the ore particles from the sandy waste tailings. Approximately 3,000 cubic yards of tailings were pumped into a pile immediately west of the mill. An estimated 4,700 cubic yards of material was mined in total. At Wurtsboro mechanical separation of the sphlalerite and galena was apparently difficult. Operations ceased just before the advent of the selective froth flotation process, which revolutionized complex polymetallic ore separation and also made many previously uneconomic large, low-grade ore deposits viable. Some accounts report that the zinc mill operated for about three years, although it appears to have closed in 1918 when it was leased to the Summitville Ore Concentrating Company. No work was being done in 1920. The property was abandoned and the mill later burned. No production records have been located (Neumann 1951: 101, 107-108; Newland 1919:305; Eilertsen 1950:6; New York State Museum 1917:303-304; Trennert 2001:9-13, 20; Weed 1920).

U.S. Bureau of Mines Exploration, 1948-1952

The U.S. Government undertook renewed exploration for strategic minerals before and during the Korean War. The U.S. Bureau of Mines investigated the Guymard and Wurtsboro mines between 1948 and 1950 and reported their findings between 1950 and 1952. At the Wurtsboro Mine, the USBM tested the mine extensively between September

1948 and April 1949, making 24 drill cores and taking samples from inside the mine workings. Site work included improvement of the road up the mountain to the mine openings. It is not known if USBM personnel lived temporarily on site or were lodged in the surrounding area. USBM drilled five test holes radiating out from the east end of the exploratory adit at the base of the mountain next to the 1917 St. Nicholas Zinc Co. mill. They located an area of metallic ore mineralization 91 m (300 ft) long and 15 m (50 ft) wide containing an estimated 91,000 tons of ore, just 30 m (100 ft) east of the end of the adit. The ore was two-thirds sphalerite with a high iron content and about one-third galena. Interestingly, experimental attempts to separate lead and zinc ores extracted from the drill cores using the modern froth flotation process were initially difficult and required considerable work to yield even fair separation (Neumann 1952: 101, 107-108, 114-116) Sims and Hotz 1951:102, 119; Eilertsen 1950: 11, 21, 24).

Shawangunk Minerals Company Mining, 1962

The last phase of mining activity at the Wurtsboro Mine took place in 1961-1962, when the Shawangunk Minerals Co., Inc., (or Shawangunk Mining Co.) of Riverdale, New Jersey, possibly operators of a franchise on the mine from an unknown party, undertook development. The company extended the exploratory adit approximately 30 m (100 ft) east to intersect the ore shoot located by the earlier USBM drilling campaign. They constructed a small concrete block building on a lower tier of the 1917 zinc mill foundation and installed an electric generator and air compressor for mine drills. They installed narrow gauge railroad tracks in the adit and used an electric locomotive and mucker to remove blasted ore from the mine. The company planned to construct a 250 TPD ore processing mill and to employ 25 men. The mill was never built and the mine operated very briefly, just long enough to leave the linear pile of discarded barren development rock and low-grade ore east of the adit. The reason for closure has not yet been determined, however, it is reasonable to assume that the ore encountered was either of too little quantity, low grade or difficult to separate to warrant the expense of further development (Crist 1962).

Phelps Dodge Exploration, 1980

In 1980 the Phelps-Dodge Company's Exploration East Inc. division evaluated the Wurtsboro Mine but opted not to pursue development. The late 1970s and early 1980s saw another wave of exploration for economically viable metallic ore deposits prompted by favorable metals prices and new understanding about the relationships between plate tectonics and mineral deposits. Several mining and energy companies revisited Appalachian mining districts and drilled them for looking for previously-overlooked and/or large, low-grade orebodies. This work resulted in discovery of several major polymetallic sulfide ore deposits including the Harborside (Callahan) Mine in Maine which was worked for copper, zinc, lead and silver from 1968 to 1972, and was the largest open-pit metal mine east of the Rocky Mountains (Phelps-Dodge 1980).

Historic Sites Sensitivity Assessment

The project area has high sensitivity for 19th to 20th century industrial and possibly residential remains, with the possibility of even earlier remains from the mine's first occupants. Historic maps indicate that there are numerous MDSs within the project area. Given a complex of this size, it is also possible that many smaller structures were not marked on these maps, as well as personal/domestic refuse piles that are likely to be encountered given the relatively remote location of the mine.

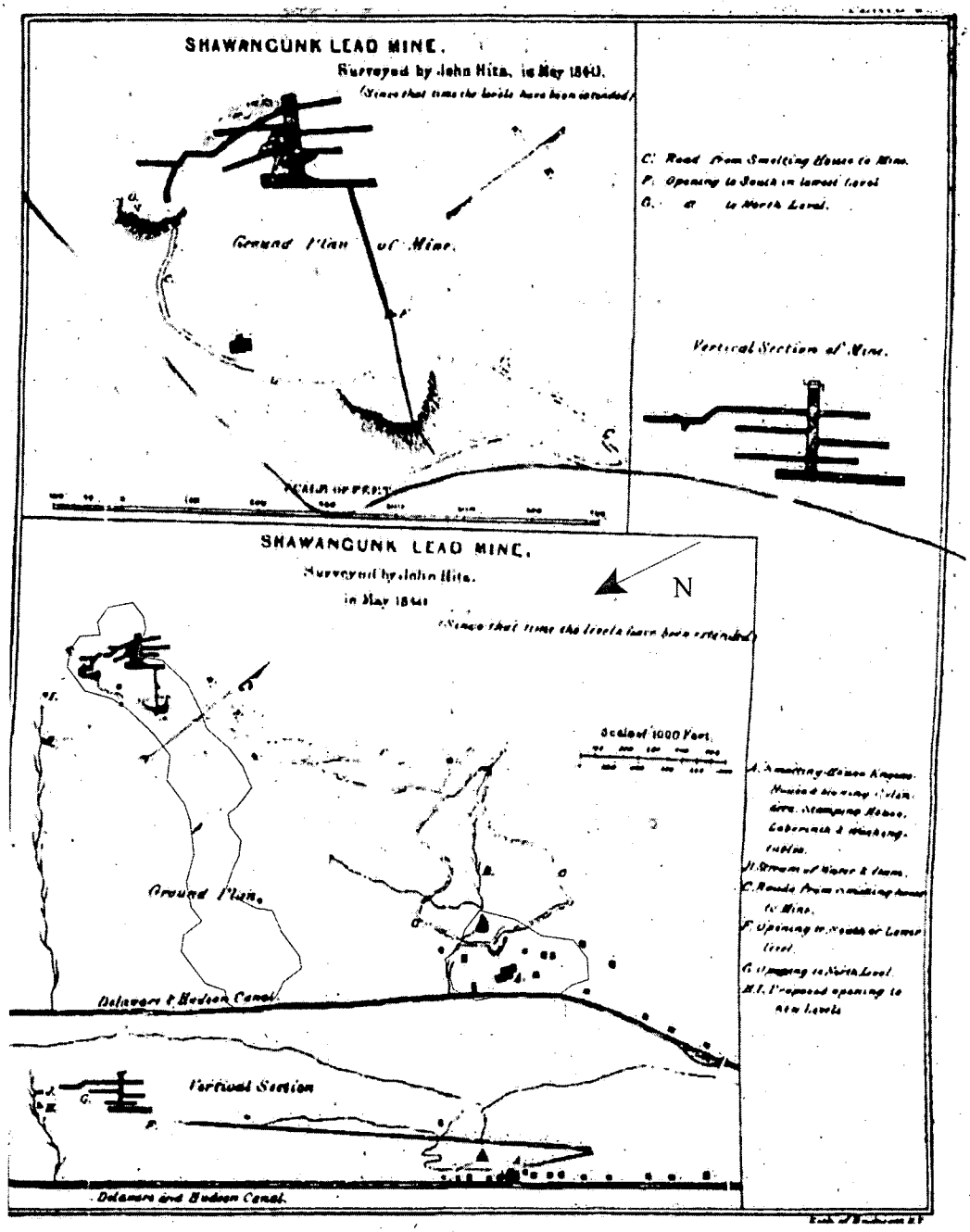

Figure 5. 1840 Hits map of the Shawangunk (Mamakating) lead mine and surrounding structures.

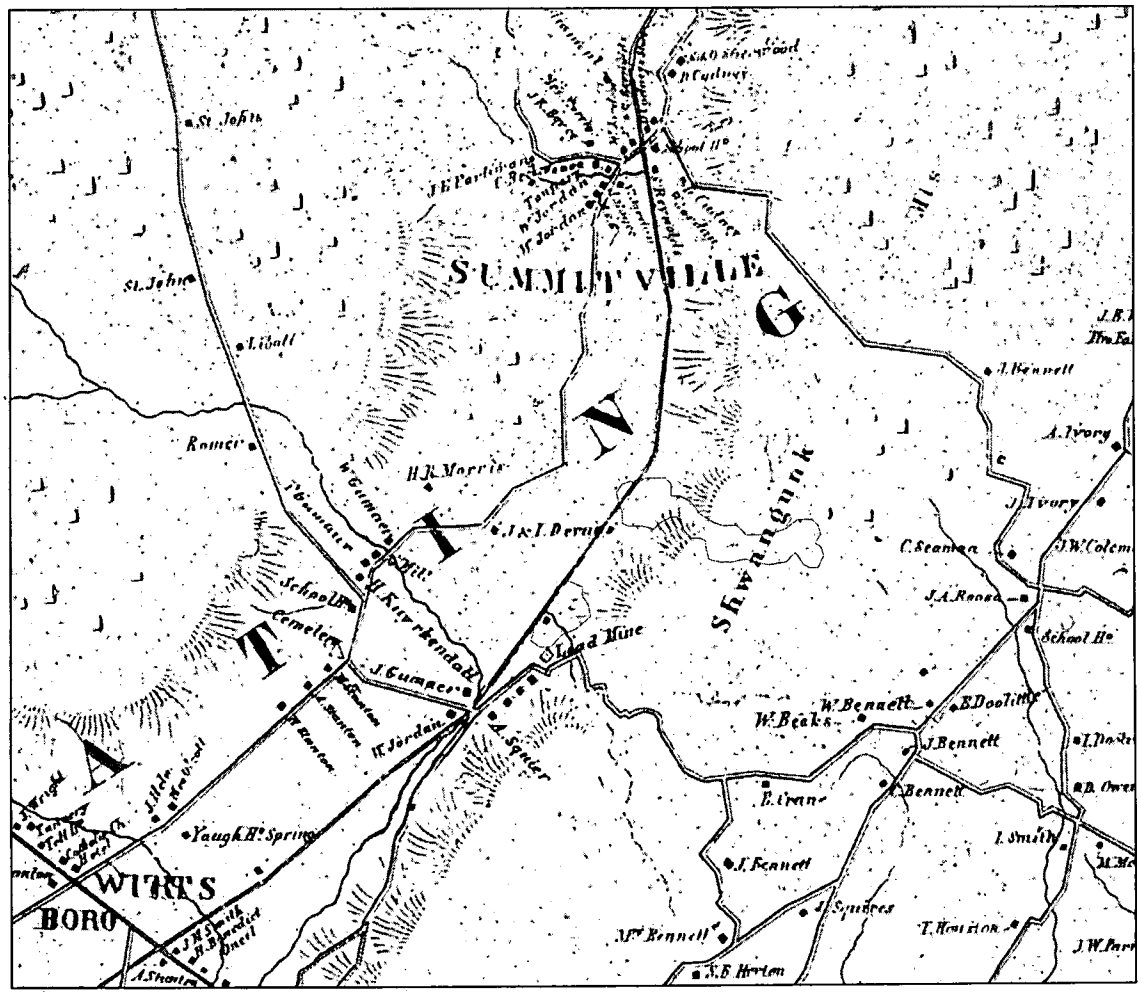

Figure 6. Approximate location of the project area on the 1856 Gates map of Sullivan County, NY.

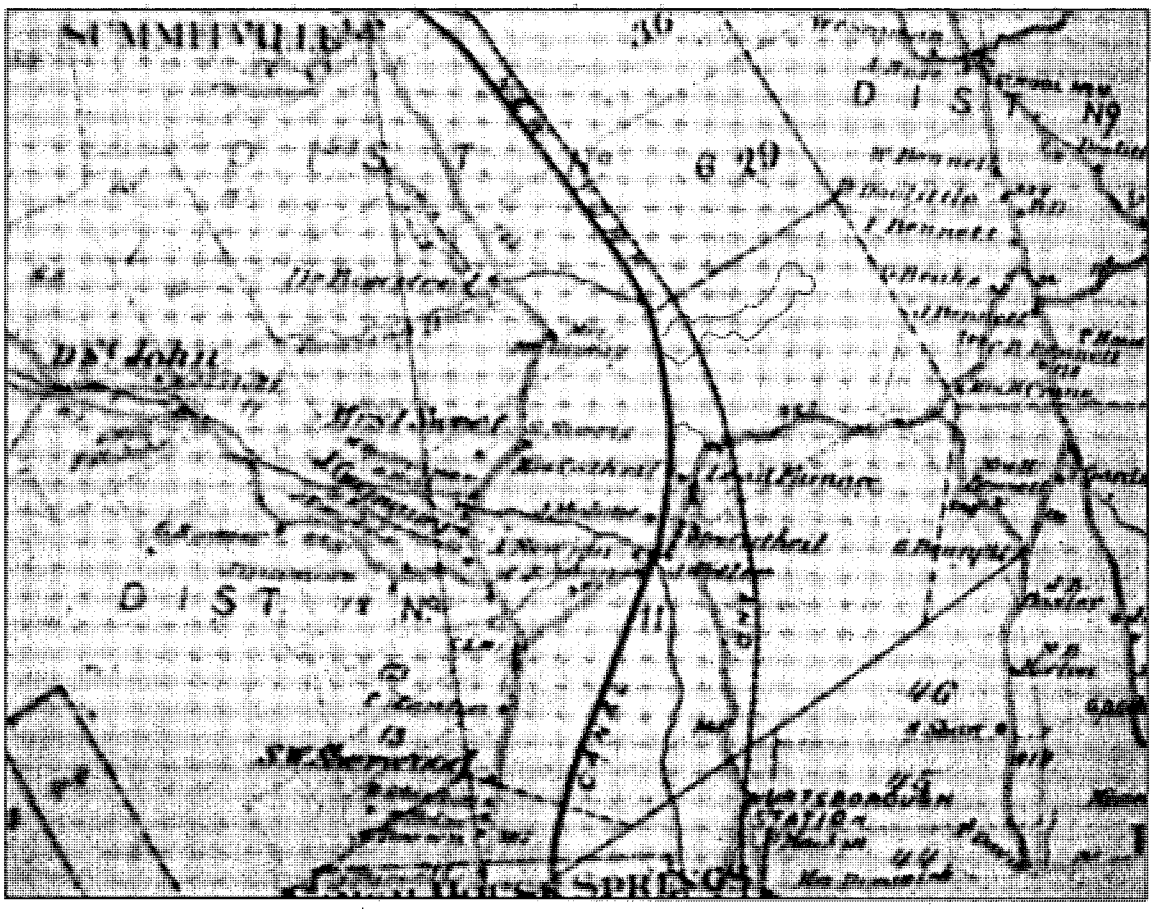

Figure 7. Approximate location of the project area on the 1875 Beers map of Sullivan County, NY.

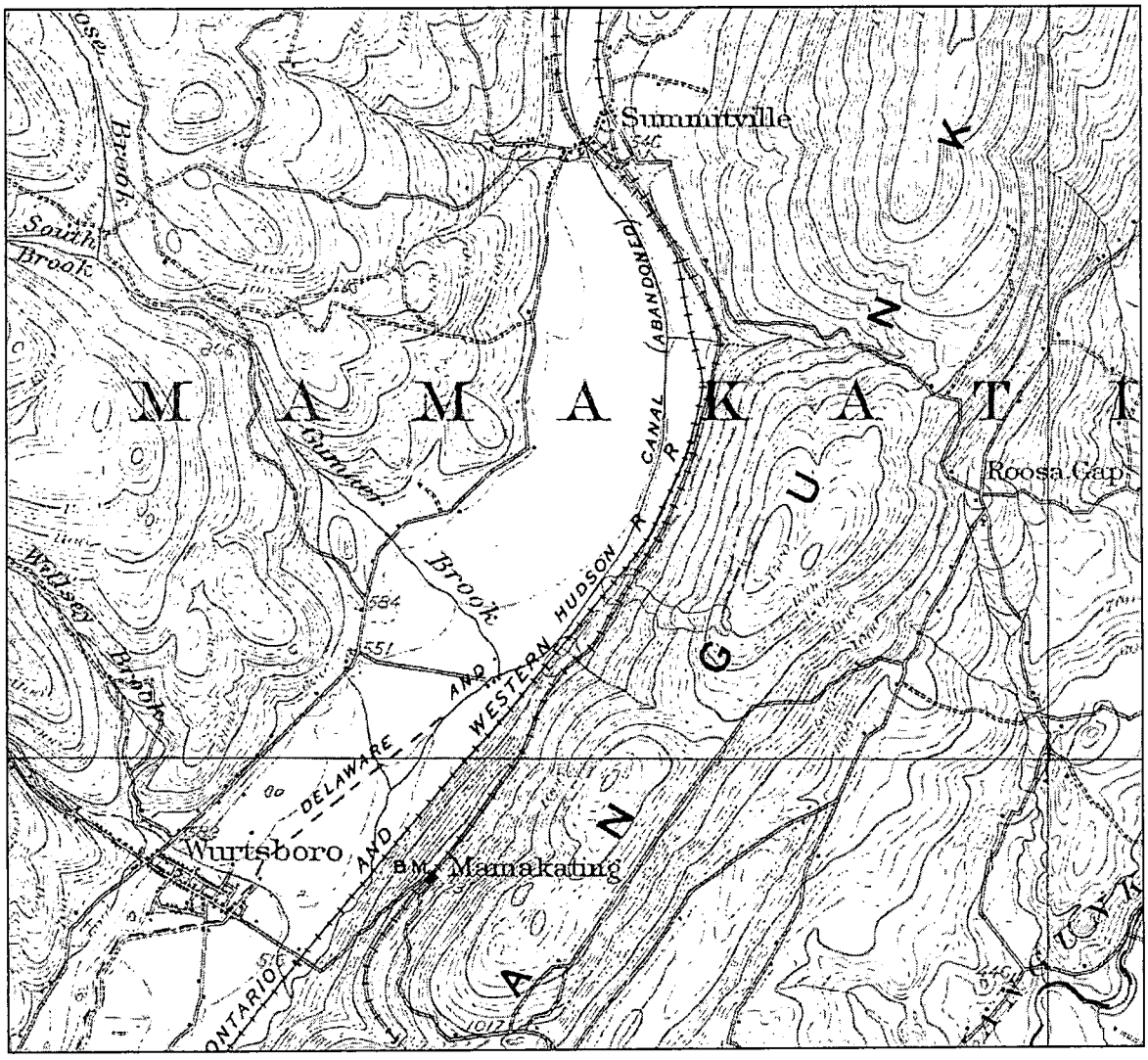

Figure 8. Approximate location of the project area on the 1906.Ellensburg 15' USGS topographic quadrangle.

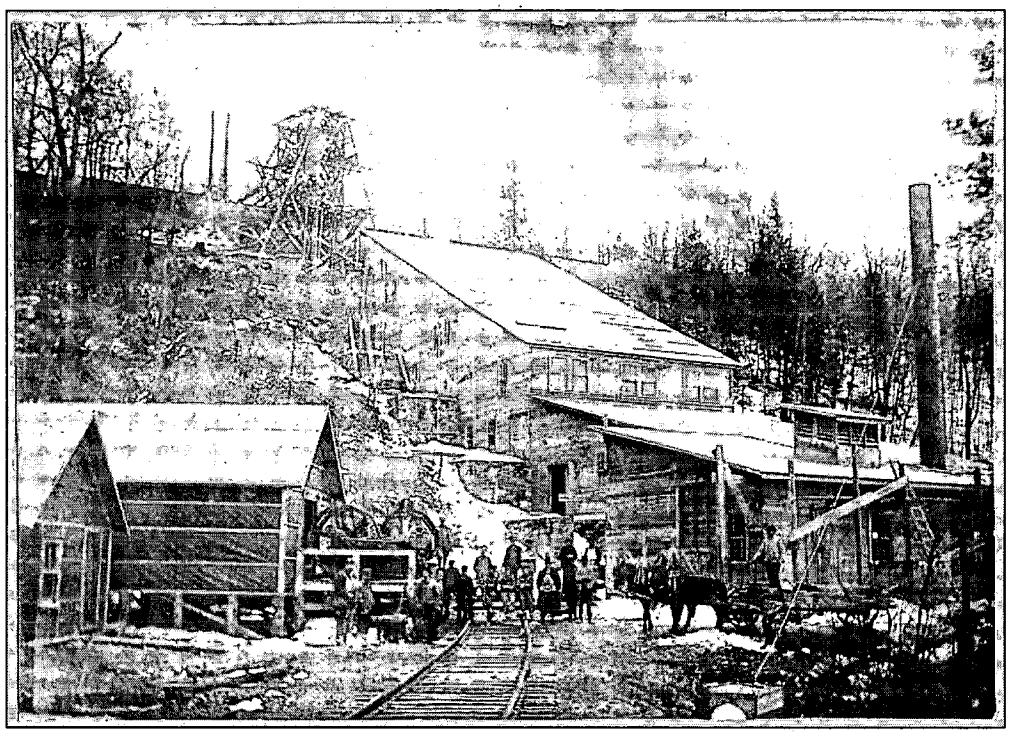

Photo 21. Photo of the ore processor and associated buildings, facing southeast, circa 1916.

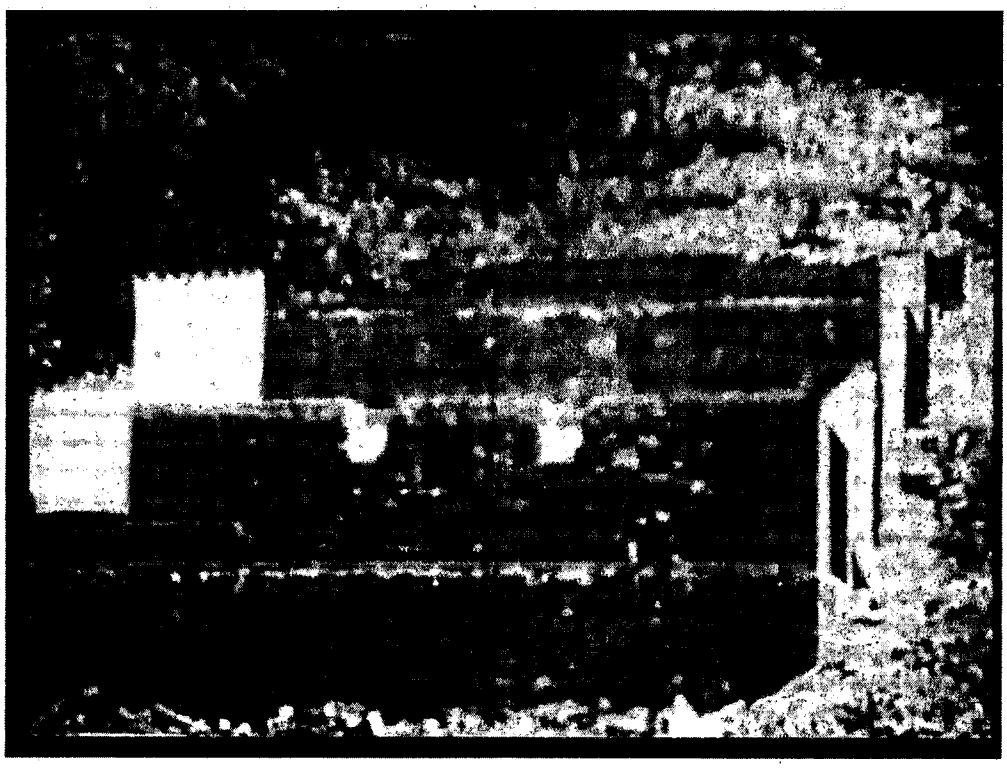

Photo 22. Photo of ore processor foundation, circa 1970s, facing northeast.

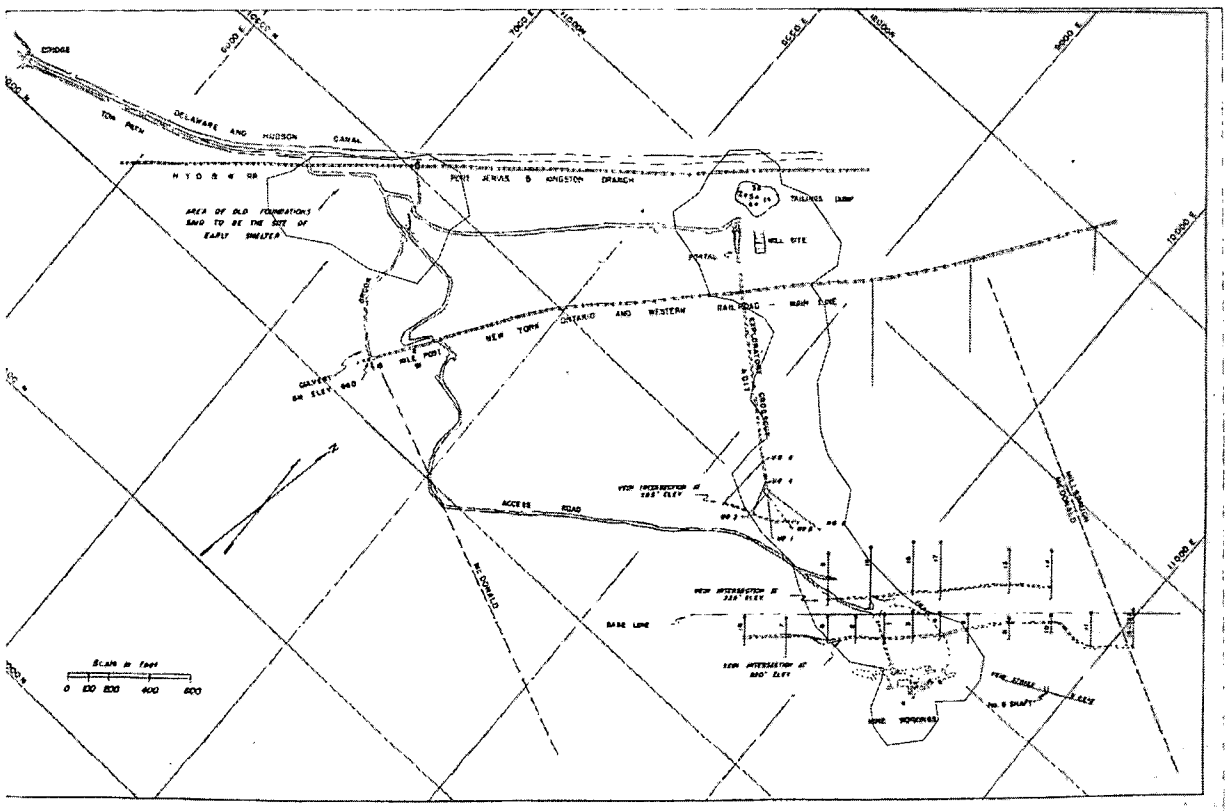

Figure 7. - Key map, Shawangunk mine near Summitville, Sullivan County, N. Y., showing locations of surface diamond-drill holes 1 to 18 and underground diamond-drill holes UG 1 to UG 6.

Figure 9. Approximate location of the project area on the 1950 Eilersten map of the Wurstboro Mine.

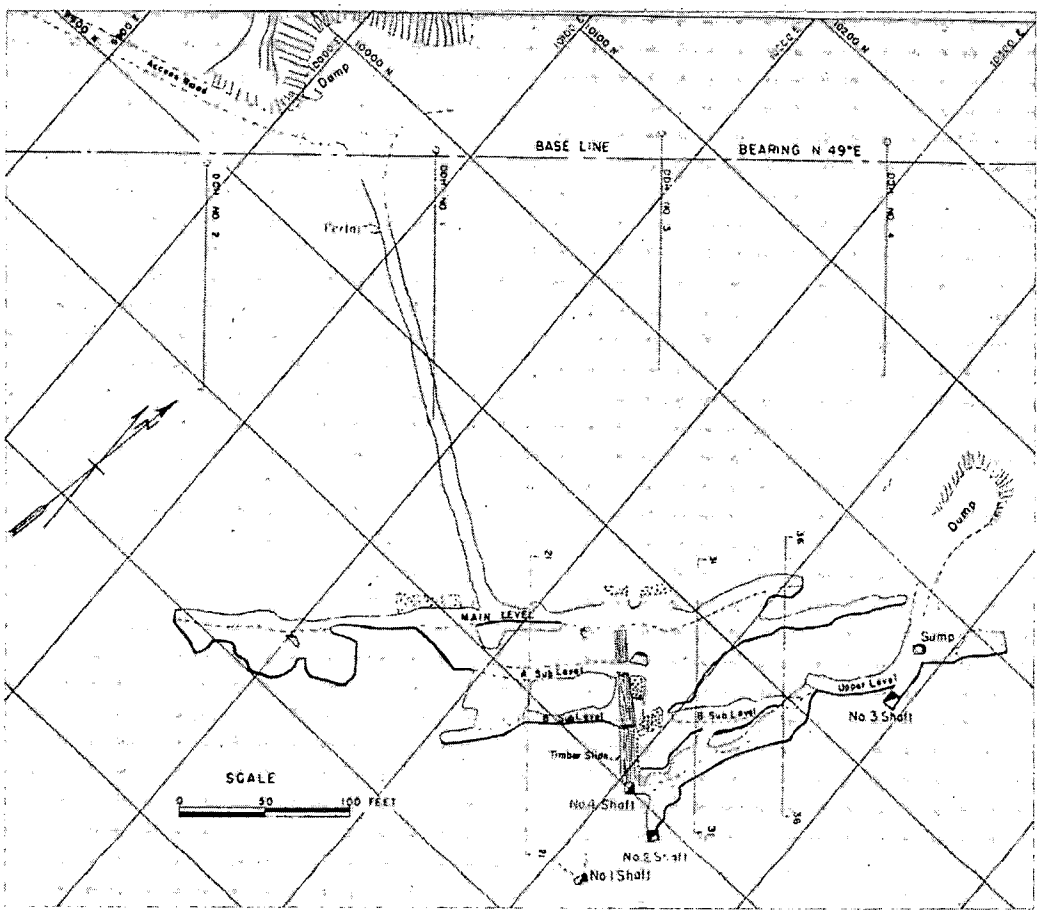

Figure 10. Detail of the upper mine works on the 1950 Eilersten map of the Wurstboro Mine.

IV. ARCHAEOLOGICAL ASSESSMENT METHODOLOGY

4.1 Project Walkover/Field Visit

Walkovers of the Mamakating Lead Mine project area were completed by Seib, LoPiccolo, and Kierstead from July to September of 2013 to identify testable areas, areas of slope and disturbance, and to determine the strategies for subsurface testing. Photographs of the project area were taken from different angles and elevations during the walkover to provide a visual representation of the environment and current landuse. The APE consists of a wooded mountainside with occasional terraces that flattens out to a terrace beside the abandoned Delaware and Hudson Canal (Photos 1-4, pp. 4-5).

4.2 Results

Numerous historic mining features were visible in both the northern and southern project areas (Photos 5-20, pp. 6-14). Investigation of historic documents following the field visits helped to further identify these features. These features at the Wurtsboro Mine most likely correspond with structures and activity areas identified on historic maps of the area (Figure 5, p. 27; Figure 9, p. 32). The primary underground mine entrances and associated waste rock piles are located in the northern project area west of the mountain ridge. At the western end of the northern project area is the early twentieth-century zinc mill foundation and tailings pile as well as the exploratory ("deep") adit. These two areas were connected by the aerial tramway stretching approximately 488 m (1,600 ft). The southern project area includes the mid-nineteenth century smelter site and associated buildings. Between these two project areas are the remains of a winding ore haulage road, the Delaware & Hudson (D&H) Canal, and the New York, Ontario & Western Railway main line and Port Jervis line. The industrial resources were components of a sequential system of extraction, movement, processing and disposal that changed over time and are best described in the order of process.

Upper Mine Openings and Waste Rock Piles

The upper mine openings and associated waste rock piles are clustered at the eastern end of the northern project area, just west of the mountain ridge. They are associated with three clearings that have been designated Tailings Piles (TP) 1, 2 and 3.

The various mine adits (horizontal tunnels) and shafts (inclined or vertical passages) and underground workings on and within the orebody are indicated in Figure 8 of that report and that numbering system is followed in this description (Figure 8). Historically, these openings provided access to the orebody and routes for bringing ore to the surface for the life of the mine and are expressions of the effort and planning involved to efficiently follow and mine the irregular orebody.

It should be noted that the word "tailings" has specific mining industry connotations and is most accurately used to describe fine waste discarded from the final milling stages of ore beneficiation (separation of desired mineral from "gangue" (undesirable host material)). At Wurtsboro the only true "tailings pile" is the sandy material west of the Zinc Ore Mill. The coarse rock in the adit/shaft areas is more properly called "waste rock," which can be further subdivided into waste (low-grade) ore, and development rock (barren of ore) from driving adits/shafts. Tailings and waste rock are both types of "mine waste." These waste piles are tangible expressions of the work involved to mine and dispose of large quantities of worthless material in order to win a small proportion of ore. The segregated piles of barren development rock and waste ore reflect the historic mining practice of setting aside low-grade material of potential future value..

Tailings Pile 1 Area

Tailings Pile 1 is a .7-acre, open, sloping area of coarse broken waste rock, mostly quartzite and quartz vein gangue with some sphalerite (zinc sulfide ore) with some smaller piles of barren development rock (Photo 5, p. 6). TP-1 flattens off at its east side, where the partially-blocked portal of the main haulage adit is located in the bedrock (Photo 6, p. 6). This adit extends underground 73 m (240 ft) east to intersect the main north-south oriented, 370 foot long main mining level, and served as the primary haulage, ventilation and drainage passage for the life of the mine. The remains of several vertical wood support posts for a former mine car trestle extend in a line from the adit to the northwest corner of TP-1 (Photo 7, p. 7). This was the location of the head of the ca. 1917 aerial tramway that carried loaded and empty

ore buckets approximately 488 m (1,600 ft) between the mine and the zinc ore mill at the bottom of the mountain. Remains of the collapsed ore bucket loader station include parallel lengths of curved angle iron connected by a shaft and lengths of rusty cable (Photo 8, p. 7).

Tailings Pile 2 Area

Tailings Pile 2 is a .2-acre, open, sloping area of coarse broken waste rock located approximately 60 m (200 ft) east of TP-1 (Photo 9, p. 8). This area includes the remains of three mine shafts (see Figure 10, p. 33). Shaft No. 1 is mostly debris-filled and was reportedly the earliest shaft at the mine and was abandoned soon after reaching 9 m (30 ft) when the ore pinched out (Mather 1843). Shaft No. 2 is approximately 12 m (40 ft) northeast of Shaft No. 1 and was worked early to extract ore from shallow, upper-level workings between it and Shaft No. 3 (see below). Shaft No. 4 (Photo 10, p. 8) is located approximately 15 m (50 ft) north of Shaft No. 1 and was the primary shaft connecting all underground working levels of the mine to the lower main level with a timber ore chute.

Tailings Pile 3 Area

Tailings Pile 3 is a .1-acre, open, sloping area of coarse broken waste rock located approximately 46 m (150 ft) north of TP-2 (Photo 11, p. 9). The low-grade ore dump in this area is flanked by discrete linear piles of darker, barren development rock (Photo 12, p. 9). This area includes the openings of a "sump" (mine drain) (Photo 13, p. 10) and Shaft No. 3 (Photo 14, p.11), which like Shaft No. 2, was worked early to extract ore from shallow, upper-level workings between the two openings.

The USBM Report describes a Shaft No. 5 located 152 m (500 ft) northeast of Shaft No. 3. In 1950 it was reportedly filled with large rocks and could be entered to a depth of 4.5 m (15 ft) (Eilertsen 1950:10).

Lead Smelter Site

The lead smelter site is located at the west corner of the mine site, in a wooded area immediately east of the Delaware & Hudson Canal towpath/NYO&W RY Port Jervis Branch and west of the NYO&W RY main line. This location was apparently chosen as it was close to transportation via the D&H Canal and near the closest watercourse of magnitude to support industrial operations. The main feature of the smelter site is a large rectangular smelter building footprint approximately 75 ft (23 m) wide by 150 ft (46 m) long demarcated by lines of loose foundation stones, with a higher southeast wall built into a terrace. Low mounds of stone and loose and mortared brick are located within the building footprint and one low area with evidence of a stone wall appears to hold water and may be a well or cistern. Visible masonry suggests separate rooms, attached wings or close outbuildings at the southwest end. The site appears to be undisturbed. The area outside the smelter building foundation contains masonry remains of structures including cellar holes to the northeast and southwest, and a stone dam to the southeast. This dam may have provided a reservoir for water for ore washing and/or mechanical power from a waterwheel, turbine or steam engine for the smelter plant. There is no visible surface evidence of ore storage above the foundation or slag disposal below it.

The lead smelter site has the potential to contain some remains of lead smelting hearths including Scotch or American-Scotch type hearths and also other equipment that may have been installed to try to realize other values and make other products from the lead ore. The site has the potential to reveal archaeological information about early-to-mid nineteenth-century lead smelting practices. It is a highly unusual industrial archaeological resource in New York and the United States.

Zinc Mill Site

The ca. 1917 zinc mill site is located at the north corner of the mine site, immediately east of the D&H canal towpath/NYO&W RY Port Jervis Branch and west of the O&W RY main line. It consists of a rectangular, approximately 30 foot wide by 75 foot long foundation consisting of four visible tiered poured concrete slab floor levels supported by stepped side walls made of roughly-coursed, mortared split stone blocks (Photo 15, p. 12) Fragments of ca. 1960 concrete block side walls remain in places. Several of the floors include concrete machinery pads and/or threaded iron machinery base mounting pins. An additional floor area at the top and/or bottom of the foundation maybe obscured by mine waste. A partially buried semi-circular masonry feature is located above the foundation and may be

footings for the bottom end of the aerial tramway, an ore bin or water tank, or an ore crusher (Photo 16, p. 12). There are no visible remains of the smaller outbuildings located north of the mill or the curving railroad spur that served it as seen in the ca. 1916 historic mill photograph (see Photo 21, p. 31). The zinc mill is a significant surviving historic ore processing resource that clearly shows the cascading nature of the gravity-fed, water-dependent ore milling process in its tiered foundation.

The area west of the mill is occupied by Tailings Pile 4 (Photo 17, p. 13). TP-4 is a layer of fine, white sandy mill tailings left over from the ca. 1917 zinc separation process. The tailings have washed under the O&W RY Port Jervis Branch right-of-way and D&H Canal towpath and formed a partially-submerged sandbar extending in both directions in the watered canal prism. The tailings, like the waste rock piles, are a significant industrial landscape feature and demonstrate period attitudes toward land use and waste deposition.

The exploratory crosscut or "deep" adit is located approximately 15 m (50 ft) south of the mill foundation at the toe of the slope. The mouth of the adit is an irregular hole cut into the bedrock and the opening is partially blocked with soil and broken rock (Photo 18, p. 13). The adit extended 339 m (1,113 ft) east into the mountain in 1950, when a wood pipe with metal pipe joints was reportedly found inside, suggesting it may date to the earliest years of nineteenth-century mining activity (Eilertsen 1950:10). The adit was extended a short distance further east for zinc ore mining ca. 1962. A linear waste rock pile extends northwest from near the mouth of the adit and appears to be associated with the brief ca. 1962 mining activity (Photo 19, p. 14).

Aerial Mine Tramway

The 1917 period zinc mining operations included an approximately 1,600 foot long aerial tramway that transported ore between the main adit within TP-1 west for processing at the zinc mill. These systems typically consisted of an endless cable loop with regularly-spaced hanging buckets that passed over a series of supporting towers. The system included an electric motor or stationary steam or gasoline engine to drive the cable, a large-diameter drive wheel at one end, and an idler wheel at the other, as well as cable control, brake and tensioning equipment. The only evidence of this system identified so far include the possible remains of the ore bucket loading machinery at the uphill end at TP-1 (described above) as well as fragments of cable. There are also possible tramway tower footings and timbers east of the zinc mill (also described above). Concrete piers and/or timber or steel tower remains may be located in a line between these two area, within the Drainage Area as delineated in Figure 9, p. 32. The lower tower had to be made tall to clear the O&W RY Main Line tracks. Drawings of the tramway line in plan and elevation are kept in the archives of the NYO&W RY Historical Society in Middletown, NY.

Mine-to-Smelter Road

A dirt road extends southwest from the main adit at TP-1 approximately 610 m (2,000 ft), makes an S-bend to negotiate a steeper slope on the lower flank of the mountain, crossed the O&W RY main line, and continues about another 229 m (750 ft) west to the lead smelter site. This road may be the route of the original road connecting the two industrial areas. The road was improved for heavy equipment travel ca. 1950 by the U.S. Bureau of Mines who reported using an old cart path, and again recently for the current site investigations.

Delaware & Hudson Canal (1828-1898)

The northwest edge of the mine site is bounded by the watered prism of the Delaware & Hudson Canal. The canal towpath runs along the southeast side of the canal through the mine site, just west of the lead smelter and zinc mill sites. The towpath is part of the Delaware & Hudson Canal Linear Park, an unpaved, mixed-use, 3.5 mile long public recreation trail between Wurtsboro and Summitville. Zinc mill tailings have washed through a culvert and into the canal and formed a partially submerged sandbar extending in both directions. This stretch of the canal is near its summit and the water reportedly flows in opposing directions depending on depth and season.

New York, Ontario & Western Railway Main Line and Port Jervis Line

The rights-of-way of two lines of the New York, Ontario & Western Railway pass through the west side of the mine site. The Cornwall to Oswego, NY Main Line descends from south to north along the lower flank of the mountain,

and the Port Jervis Branch closely follows the D&H canal towpath. These lines meet at a track junction north of the mine site at Summitville. Both rail lines were constructed in the late 1860s-early 1870s. The Main Line right-of-way infrastructure consists of high filled embankments and shallow rock cuts. The railroad was two tracks wide in this area and the roadbed now carries a cinder-based packed dirt roadway. The Port Jervis Branch served the ca. 1917 St. Nicholas Zinc Co. mill via a spur track that curved southeast off the line. The roadbed of the Port Jervis Branch is flatter and more ephemeral. Although it runs through the smelter site, its construction postdates smelter operations. The lack of slag at the smelter may be explained by the location of the adjacent railroad, which may have taken advantage of the fortuitous slag heaps for nearby roadbed construction.

V. RECOMMENDATIONS

The background research and field investigations suggest that there is the potential for archaeological sites within the project APE. Because of this assessment, we recommend that Phase 1B archaeological testing be conducted to locate and then manage the cultural resources that may be present within the APE.

The Phase 1B survey would consist of two testing strategies: 1) documentation of foundations and surface features to identify known MDSs and 2) systematic subsurface survey.

- The ***documentation of foundations and surface features*** would consist of archaeologists and historic specialists walking the project area using historic mapping and attempting to locate, photograph, and map existing foundations and features related to the functioning of the Mamakating lead mine. This includes the Delaware and Hudson Canal which crosses the APE and will be impacted by this project. Once historic resources are identified and documented, access routes into the project area for heavy equipment can be evaluated and staked out for subsequent work.

- The ***systematic subsurface survey*** would consist of a total of 400-475 STPs . These would be dug at 15 m (50 ft) intervals throughout the project areas, with shorter interval 7.5 m (25 ft) testing in areas where known MDSs were not identified during the preceding foundation mapping. The total project area consists of 26.74 ha (66.1 ac), but 20.42 ha (50.4 ac) of this consists of slope, deep muck soils, and tailing piles, leaving 6.32 ha (15.7 ac) of testable APE. All STPs should extend to a depth of 15 cm (6 in) into sterile subsoil when not stopped by roots or rocks.

In the northern APE only three MDSs are present, all within sloping areas. Testing may be required on several short terraces up the hillside to the east where MDSs are indicated on historic maps, and should consist of approximately 50 STPs at 7.5 m (25 ft) intervals. Testing in the western end of the northern area outside of these MDS areas can be conducted at 15 m (50 ft) intervals, requiring between 100-125 STPs to adequately test.

The southern APE will require testing at 15 m (50 ft) initially, but may require 7.5 m (25 ft) intervals due to eight MDSs within the APE. This area will require between 200-250 STPs at 15 m (50 ft) intervals and 50 STPs at 7.5 m (25 ft) intervals to adequately test. Deep Carlisle muck soils can be excluded from the testable area. Deep soils are not expected in this area.

The field methodology outlined meets New York State Standards (1994, 2005) to collect all the information required by state reviewing agencies.

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APPENDIX II: CORRESPONDENCE

CONFIDENTIAL; Not for Public Release
NYS OFFICE OF PARKS, RECREATION AND HISTORIC PRESERVATION
Field Services Bureau Files Search

Date: October 2012
Conducted By: L . Miroff
Project: PIN 9177.18.101
Minor Civil Division (MCD): Town of Mamkating (01511)
County: Sullivan
USGS Quadrangle: Wurtsboro

1. Archaeological Sites (within 3.2 km / 2 mi radius):

Refer to attached table.

2. Surveys and Reports within immediate or adjacent MCDs: (Selected B within 3.2/4.8 km (2/3 mi) radius):

OPR Report#72, *Phase IB Cultural Resource Survey, Proposed Kohl's Distribution Center, Town of Mamakating, Sullivan County, New York.* Ian Burrow and Damon Tvaryanas, Hunter Research, Inc., Trenton, NJ, June 2001. No sites identified.

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3. National Register Eligible and Listed Properties within, adjacent, or within view shed of project area:

NRL: 02NR04991, Mastin-Quinn Residence, 59 First Street, Wurtsboro.
NRL: 98NR1421, 10545.000040, Mamakating Avenue, barber shop, 98NR1421
NRL: 98NR1421, 10545.000037, Mamakating Avenue, Canal House/Sullivan House/Mindich Camp Cottage
NRL: 98NR1421, 10545.000038, Mamakating Avenue, Hotel Site
NRL: 98NR1421, 10545.000035, Mamakating Avenue, Lantor Cottage
NRL: 98NR1421, 10545.000036, Mamakating Avenue, Mindich Cottage
NRL: 98NR1421, 10545.000039, Mamakating Avenue, the Casino
NRL: 98NR1421, 10545.000018, Mamakating Avenue, the Casino

4. Inventoried Structures within, adjacent, or within view shed of project area:

10511.000034, CR171, BIN 3356200 over Basherkill (structure)
10511.000035, CR172, BIN 3356210, over tributary of Wilsey Brook (structure)
10511.000095, 10 Johnson Lane, residence (building) (Individually eligible) possibly not within 2 mi of pa
10511.000052, NY209, Gumaer Farm Resources, both sides north of McDonald Road
10511.000053, NY209, Stanton Family Cemetery, west side, at McDonald Road (Individually eligible)
10511.000118, NY209, Wurtsboro Airport Archaeological Site (Individually eligible)
10511.000043, Old NY209, Steichel House (District), possibly not within 2 mi of pa
10511.000044, Old NY209, Torres House (District), possibly not within 2 mi of pa
10511.000042, Old NY209, Washburn House (District), possibly not within 2 mi of pa
10511.000002, Old State Road, Greek Revival House, Summitville, north side, east of Mt. Vernon Rd, possibly not within 2 mi of pa
10511.000011, Old State Road, residence, Summitville, west side Rte. 209, possibly not within 2 mi of pa
10511.000008, Summitville Methodist Church, south side, east of Mt. Vernon Rd, possibly not within 2 mi of pa
10511.000009, Old State Road, School House, Summitville, south side, west of Rte. 209 (Individually eligible), possibly not within 2 mi of pa
10511.000010, Old State Road, residence, east side, west of Rte. 209, possibly not within 2 mi of pa
10511.000046, Schoolhouse Lane, Torris rental, possibly not within 2 mi of pa (not eligible)
10511.000055, Shawanga Lodge Road, Modern house, possibly not within 2 mi of pa
10511.000056, Shawanga Lodge Road, Modern ranch, possibly not within 2 mi of pa
10511.000059, 459 Shawanga Lodge Road, possibly not within 2 mi of pa
10511.000032, Stonefield Road, R. Scales House (building) (not eligible), possibly not within 2 mi of pa
10511.000045, Terrace Drive, Torrisi House, possibly not within 2 mi of pa
10511.000060, 2794 US 209, possibly not within 2 mi of pa
10511.000061, 2800 US 209, possibly not within 2 mi of pa
10511.000062, 2808 US 209, possibly not within 2 mi of pa
10511.000065, 2817 US 209, possibly not within 2 mi of pa
10511.000064, 2826 US 209, possibly not within 2 mi of pa
10511.000068, 2901 US 209, possibly not within 2 mi of pa
10511.000069, 2921 US 209, possibly not within 2 mi of pa
10511.000070, 2933 US 209, possibly not within 2 mi of pa
10511.000063, 3068 US 209, possibly not within 2 mi of pa
10511.000071, 3108 US 209 (not eligible), possibly not within 2 mi of pa
10511.000067, 3108 US 209, possibly not within 2 mi of pa
10511.000066, 4080 US 209, possibly not within 2 mi of pa
10545.000043, 28 Pennsylvania Avenue, Chase Elementary School
10545.000048, Pennsylvania Avenue, west side, south of Sullivan Street, farmhouse, possibly Morrison Farm (district)
10545.000047, Pennsylvania Avenue, west side, John A. Morrison Farm (Individually eligible)
10545.000003, Sullivan Road, Wurtsboro United Methodist Church/Wurtsboro, north side, possibly not within 2 mi of pa
10545.000009, Sullivan Road, Bob's TV, residence, south side, possibly not within 2 mi of pa
10545.000002, Sullivan Road, Canal Towne Emporium, Wurtsboro, south side, possibly not within 2 mi of pa
10545.000011, Sullivan Road, Church of St. Joseph, south side, possibly not within 2 mi of pa
10545.000001, Sullivan Road, Community Reformed Church, north side, possibly not within 2 mi of pa
10545.000007, Sullivan Road, Greenwald and Graubard Law Office, north side, possibly not within 2 mi of pa
10545.000004, Sullivan Road, Imelda's Deli, south side, Wurtsboro, possibly not within 2 mi of pa
10545.000010, Sullivan Road, Old Hotel/Danny's, north side, possibly not within 2 mi of pa
10545.000008, Sullivan Road, residence, possibly not within 2 mi of pa
10545.000005, Sullivan Road, residence, north side, Wurtsboro, possibly not within 2 mi of pa
10545.000012, Sullivan Road, residence, south side, possibly not within 2 mi of pa
10545.000013, Sullivan Road, residence, US 209, east side, south, possibly not within 2 mi of pa

10545.000014, Sullivan Road, Wurtsboro Railroad Station/Wurtsboro Lumber Company, south side; CO RD 71, possibly not within 2 mi of pa
10545.000050, 15 Sullivan Street, possibly not within 2 mi of pa
10545.000049, 204 Sullivan Street, (District), possibly not within 2 mi of pa
10545.000006, Third Street, Temple Beth, west side, north of Sullivan Street, Wurtsboro

CONFIDENTIAL; not for public release
NYSOPRHP Site File Search Results
(sites within 3.2 km / 2 mi radius from project area)
October 2012

#	Site #	Site Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
1	NYSM 4936	No Information	Large area, 3,219 m (10,561 ft) southwest of pa/244 m (800 ft) to Basher Kill/159 m (520 ft)/flat	No Information	Village	No Information	Parker 1922 (NYSM map has two locations based on inconsistent ACP description)
2	10511.000093	Bridge (D) Site	2,785 m (9,138) ft northeast of pa/244 m (800 ft) to water/155 m (510 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
3	10511.000092	Swamp Bridge Site	1,366 m (4,480 ft)/335 m (1100 ft) to water/155 m (510 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps

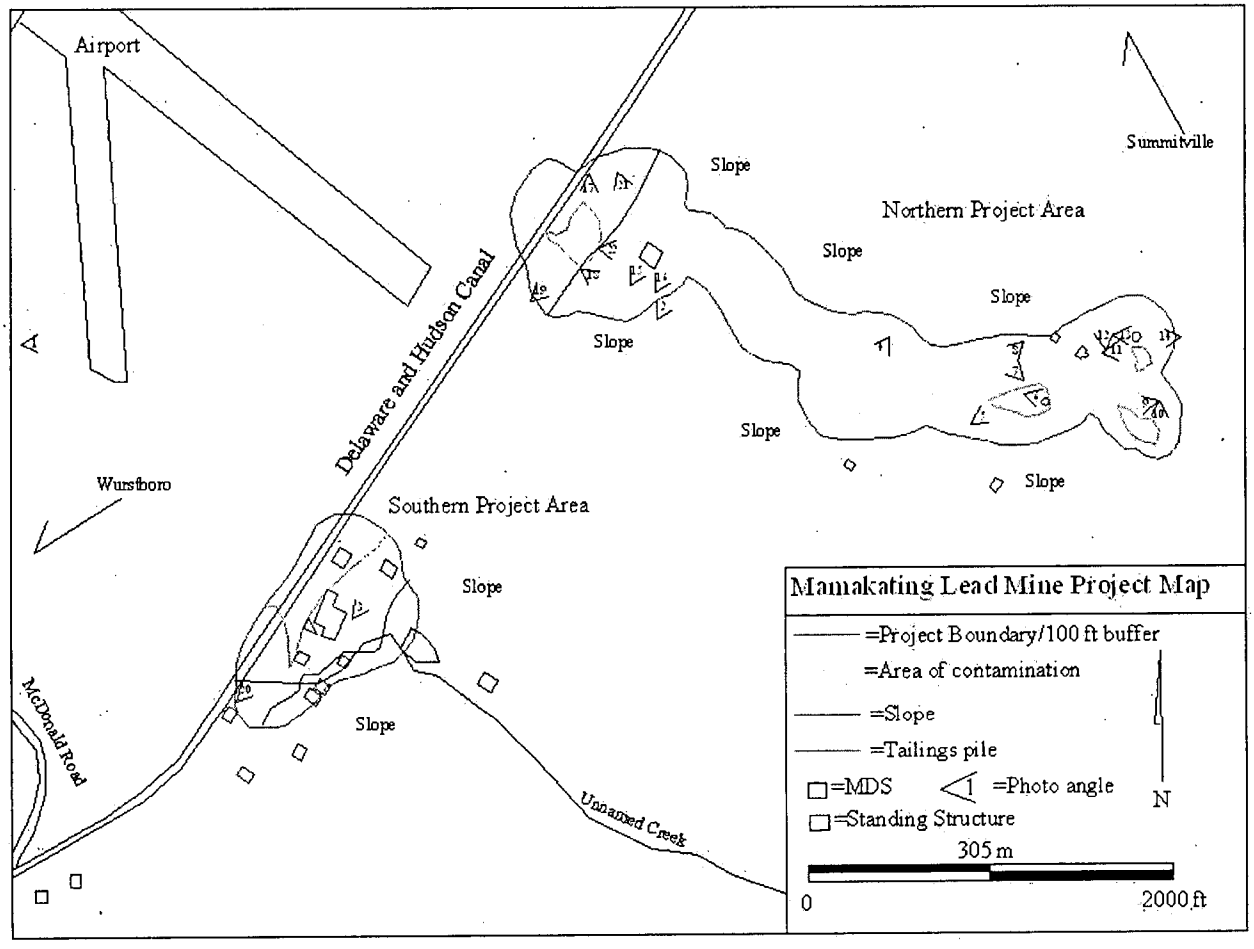
#	Site #	Site Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
4	10511.000091	Lead Factory Bridge Site	1,017 m (3,338 ft) southeast of pa/over Gumaer Brook/162 m (530 ft)/flat	Occupied 1829-98; still in use	Bridge (stone, masonry load bearing walls); Location of bridge built by Delaware and Hudson Canal Company over canal to access Historic Lead Mines. After canal was abandoned, the abutments were lowered to grade level crossing.	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
5	1-511.000090	Hornbeck's Bridge Site	1,041 m (3,414 ft) southwest of pa/396 m (1300 ft) to water/162 m (530 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
6	10511.000089	Helm's Bridge Site	1,437 m (4,715 ft) southwest of pa/305 m (1000 ft) to water/162 m (530 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
7	10511.000088	Masten's Bridge Site	1,684 m (5,526 ft) south of pa/335 m (1100 ft) to water/162 m (530 ft)/flat	Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps

#	Site #	Site Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
8	10511.000087	Youghhousekill Aqueduct Site	2,210 m (7,251 ft) southwest of pa/over Youghhousekill Creek/162 m (530 ft)/flat	1826; Occupied 1828-98	Bridge (stone); Location of bridge built by Delaware and Hudson Canal Company to carry canal over Youghhousekill Creek; removed after canal abandoned	Surface 2001	Larson and Associates; 1865 L.W. Weston Maps
9	10545.000047	J. A. Morrison Site	2,941 m (9,650 ft) southwest of pa/600 m (1968 ft) to water/150 m (520 ft)/flat	Built prior to 1856 (on 1856 map) to late 20th century		19 STPs; bottle glass, window glass, bone, staple, bolt, whiteware, cut nails, slate pencil, lamp glass, oyster shell, redware manganese glaze pie plate, medicine bottle, possible auger fragment	Rosentel, Corey 2008
10	10511.000101	Kaufman Farms 1 Site	3,266 m (10,714 ft) southwest of pa/183 m (600 ft) to basher Kill/159 m (520 ft)/flat	Late Archaic	No Information	9 STPs; 1 Late Archaic point, 1 dark gray chert non-cortical flake, 1 light gray chert non-cortical flake (heat treated), 1 light gray chert non-cortical flake	Rosentel, Corey 2008
11	10545.000044	Kaufman Farms 2 Site	3,036 m (9,961 ft) southwest of pa/298 m (977 ft) to water/159 m (520 ft)/flat	Late Archaic	No Information	41 STPs; 1 Late Archaic point, 2 Onondaga chert non-cortical flake, 1 red jasper non-cortical flake, 1 non-cortical flake (unidentified chert), 1 Onondaga chert core, 1 gray chert cortical flake	Rosentel, Corey 2008

#	Site #	Site Name	Distance from PA / Distance from water / elevation / slope	Cultural Affiliation/Dates	Type	Testing	Reference
12	10545.000046	Kaufman Farms 4 Site	3181 m (10,436 ft) southwest/262 m (860 ft) to water/159 m (520 ft)/flat	Late Archaic	No Information	44 STPs, 7 1 x 1 m units; 1 Late Archaic point, 2 gray chert cores, 2 cortical flakes, 2 FCR, 9 non-cortical flakes, 5 shatter, 1 shell.	Rosentel, Corey 2008
13	10545.000045	Kaufman Farms 3 Site	3230 m (10,598 ft) southwest of pa/207 m (679 ft) to water/159 m (520 ft)/flat	Late Archaic	No Information	15 STPs, 7 1 x 1 m units; 1 Late Archaic point, 20 non-cortical flakes, 8 shatter, 5 cortical f lakes, 17 FCR	Rosentel, Corey 2008

Parker, Arthur C *History of the Archaeology of New York State*, NYS Museum Bulletins 238-239: 1920-22.

APPENDIX III: PROJECT MAP



WURSTBORO STATE FOREST, MAMAKATING LEAD MINE
MAMAKATING, SULLIVAN COUNTY, NY
DEC #353013

PHASE 1B SCOPE OF WORK

The NYS Museum is assisting NYSDEC with cultural resource services associated with this project (DEC #353013). The Public Archaeology Facility (PAF) has been assigned this project and has developed a Scope of Work. The Scope of Work for this project follows the recommendations contained in the Phase 1A report (Seib 2014); these tasks are outlined below. We request that the NYSDEC notify the landowners to be affected by this scope of work and obtain access to the property prior to the initiation of the testing. We ask that NYSDEC provide written notification to SED/NYSM once notification and access has been obtained and the Scope of Work can begin.

Task 1 – Project Health and Safety Plan

Based on the Phase 1A report, the portion of the project area slated for immediate Phase 1B testing (the Lower Mill area near the canal in the northern portion of the project area) is contaminated. Therefore, prior to the reconnaissance survey, a Health and Safety Plan (HASP) will be completed by PAF. The HASP will include information about the project, known contaminants in the project area, the location of medical facilities, contacts, and procedures for working in a contaminated area. The HASP will be submitted to all parties for acceptance prior to the start of fieldwork.

Task 2 - Reconnaissance Survey in the Lower Mill area near the canal, northern portion of the project area.

Based on the Phase 1A report (Seib 2013), the remediation area that is currently being investigated encompasses the mill, a nearby tailing pile for the lowermost mine, and a small area of the canal. This project area is approximately 16.8 acres. Of this total, approximately 1.2 acres consists of the tailings pile (all rock), .7 acres consist of the canal bed, and 8.3 acres is slope (these areas will not be tested). This leaves approximately 6.6 acres to test for cultural resources. Testing will be done at 15 m (50 ft) intervals, with some additional testing in the vicinity of the mill at 7.5 m (25 ft) intervals. Approximately 100 STPs (shovel test pits) are expected within this portion of the project area. The survey will also include mapping of the mill foundation. The testing will be completed with a project director and staff, all of whom have had 40 hour HAZWOPER training, along with yearly 8 hour refresher courses.

Task 3 – Lab Analysis

If historic or prehistoric cultural material is recovered during the reconnaissance survey, an attempt will be made to clean the material in the field, following protocols contained in the HASP. The cleaned material will then be brought back to the lab of the Public Archaeology Facility for analysis. If materials are too large to remove (large iron objects, mill stones) or cannot be decontaminated, then those materials will be measured, photographed, and left within the project area.

Task 4 – Prepare Cultural Resource Survey Report

The results of Task 2 and Task 3 will be compiled into a Phase 1B report of findings. The report will include a summary of methods, the results of the reconnaissance survey and the lab analysis, discussion of any sites identified, NYS site forms, and recommendations for additional work (Phase 2 site examinations or Phase 3 data recoveries), if sites cannot be avoided. Six printed copies of the final report, along with two electronic copies will be provided.

Costs:

Personnel Services: Task 1 - $ 2525.56;
Task 2 - $18,199.32;
Task 3 - $ 938.28;
Task 4 - $ 4653.24;
Total - $26,316.40

Non Personnel Services: $8534.40

Total - $34,850.80

ATTACHMENT F


KOMATSU
PC
200
HD
KOMATSU

ATTACHMENT G

New York State Department of Environmental Conservation
Division of Lands and Forests
Division of Environmental Remediation

in consultation with
New York State Department of Health

FACT SHEET

WURTSBORO RIDGE STATE FOREST
HISTORIC LEAD MINE
DEC SITE # 353013
NOVEMBER 2012

It is the policy of the New York State Department of Environmental Conservation (DEC) to manage state lands for multiple uses to serve the People of New York State. A Unit Management Plan (UMP) is the first step in carrying out that policy. In the course of developing the UMP for the Wurtsboro Ridge State Forest in the Town of Mamakating, Sullivan County, the New York State Department of Environmental Conservation (DEC) learned of the presence of contamination associated with an historic lead mine on the property (see Figure 1 - Site Location Map).

Major mining began in the 1830s and continued until approximately 1920, though small-scale extraction of lead reportedly occurred much earlier (1600s). As a result of these historic mining operations, four distinct surface deposits of mine tailings remain on the property. Three of these are located near the top of the ridge and the fourth is located at the base of the ridge along the Delaware and Hudson (D&H) Canal, where a county-owned linear park runs along the former towpath. Together these piles comprise approximately 2 acres (see Figure 2). In addition, soil particles have eroded from the lower tailings pile and have accumulated as a sediment deposit (i.e., sand bar) in the D&H Canal (see Figure 2).

Due to the presence of these tailings piles, DEC conducted a potential contaminated site investigation of the historic mine areas in association with development of the property's UMP. Limited sampling data obtained to date indicate that lead levels in the tailings piles, surface water in the vicinity of the tailings piles, and the sediment deposit in the D&H Canal near the lower tailings pile, are contaminated with elevated levels of lead. These findings indicate that precautions must be taken to prevent public contact with this contamination until a detailed site investigation and subsequent remediation can be performed. These precautions include the following:

- In accordance with Environmental Conservation Law (ECL), Section 03-0301, DEC will prohibit public use of the areas affected by historic mining operations that include exposed mine tailings and surface waters emanating from the mine shafts by establishing Restricted Areas and posting signage at the locations shown on maps of the area (see Figure 2 for Restricted Areas).
- DEC, in conjunction with the NYS Department of Health (DOH), is informing the public, including user groups of the State Forest and other stakeholders, of the presence of the Restricted Areas and health precautions that should be taken when using the unrestricted portions of the property.
- No one should enter the posted Restricted Areas, including children and pets.
- Users of the unrestricted portions of the property should not drink, and not filter and drink any surface water they encounter in the vicinity of the mined areas.
- Users of the unrestricted portions of the property should make sure to wash their hands and the hands of children thoroughly with uncontaminated water before eating, drinking or smoking during or after a visit to this property. In addition, shoes/boots and pets should be thoroughly cleaned prior to bringing them indoors.
- DEC has advised Sullivan County of the need for restricting public access to a small affected area in and adjacent to the D&H Canal, along the D&H Canal Linear Park (see Figure 2) and will work with the County to post similar warning signs as noted above.

CONSUMPTION ADVICE FOR DEER AND OTHER GAME

High levels of lead in the environment can accumulate in wildlife. Because of this, meat, organs and bones from deer and other game taken in the Wurtsboro Ridge State Forest area could contain elevated lead levels. Since much of lead accumulates in bones, NYSDOH recommends removing the bones from meat of deer and other game taken in the Wurtsboro Ridge State Forest area before cooking. Additionally, small lead fragments can be present in game harvested with lead bullets or shot. Some bullets shatter into small pieces that can be too small to detect by sight, feel, or when chewing. Remove all identifiable bullets, slugs, shot, lead fragments and affected meat (including feathers, fur, debris, etc.) from game when preparing it. You may also want to consider using non-lead alternatives to hunt game.

Reducing exposure to lead is important because lead can cause health problems when it builds up in the body, especially for babies and young children. Lead poisoning can slow a child's physical growth and mental development, as well as cause other effects on the nervous system and other organs. Proper preparation methods, good sanitary practices and using non-lead alternatives can all help to reduce exposure to lead from game.

More Information Concerning Lead Exposure From Fish and Game

- For more information on lead in shot and bullets and best practices when handling or processing animals visit the NYSDOH website at http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/advice_on_eating_game.htm
- Also, for general information on eating fish caught in the waters of New York State please visit the NYSDOH website at: http://www.health.ny.gov/environmental/outdoors/fish/health_advisories/
- For questions about potential health effects and how to reduce your lead exposures, call NYSDOH at 518-402-7800 (toll free at 1-800-458-1158); or email NYSDOH at BTSA@health.state.ny.us.

NEXT STEPS:

DEC will conduct further investigations to determine the extent of contamination for all areas. Test results will be used to formulate a remediation plan. Once the Proposed Remedial Action Plan (PRAP) is developed for the site, it will be presented to the public by the Division of Environmental Remediation. The investigation is planned to begin in 2013, contingent upon the availability of funds. Existing access roads will need to be improved and possibly new portions constructed, to facilitate access to perform the investigation and subsequent remediation work.

The draft UMP is expected to be publically available in 2013. The UMP will be presented, and public comment accepted, at a future public meeting conducted by the Division of Lands and Forests.

FOR MORE INFORMATION CONCERNING THE PROJECT

Project documents are available at the following location(s) to help the public stay informed.

Mamakating Library
Director: Greg Wirszyla
156-158 Sullivan Street
Wurtsboro, NY
Phone: (845) 888-8004
http://mamakatinglibrary.org

NYSDEC Region 3 Office
21 South Putt Corners Road
New Paltz, NY 12561
Phone: (845) 256-3154
(Please call for an appointment)

CONTACTS
Site-related questions should be directed as follows:

Site Investigation Questions
Janet Brown, P.E.
NYSDEC
21 South Putt Corners Rd.
New Paltz, NY 12561
(845) 256-3826
jebrown@gw.dec.state.ny.us

Site-Related Health Questions
Tony Perretta
NYS Department of Health
Empire State Plaza, Corning Tower
Room 1787
Albany, NY 12237
(518) 402-7880
BEEI@health.state.ny.us

State Forest Use Questions
Jeffrey Wiegert
NYSDEC
21 South Putt Corners Rd.
New Paltz, NY 12561
(845) 256-3084
jawieger@gw.dec.state.ny.us

We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.

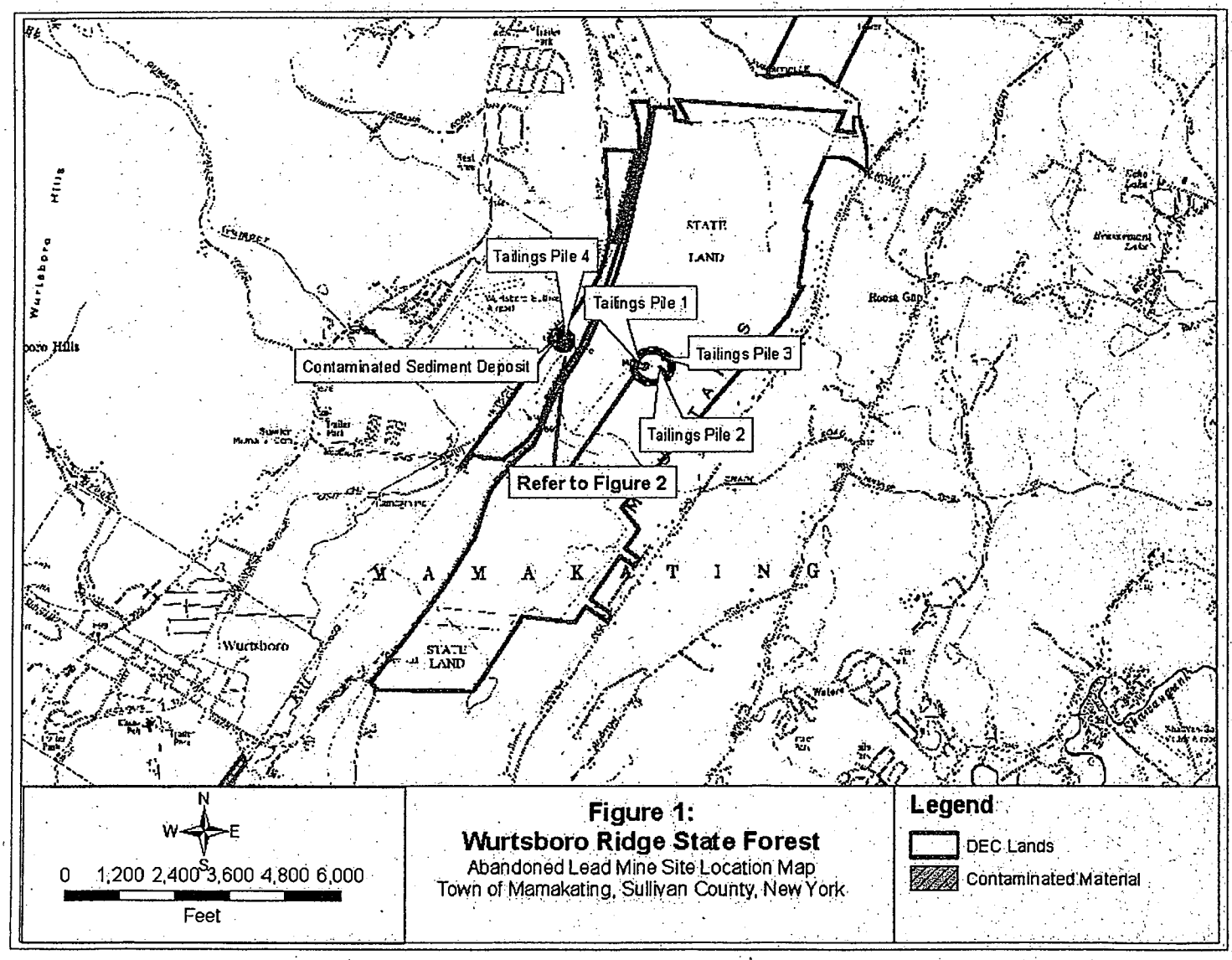


Figure 1:
Wurtsboro Ridge State Forest
Abandoned Lead Mine Site Location Map
Town of Mamakating, Sullivan County, New York

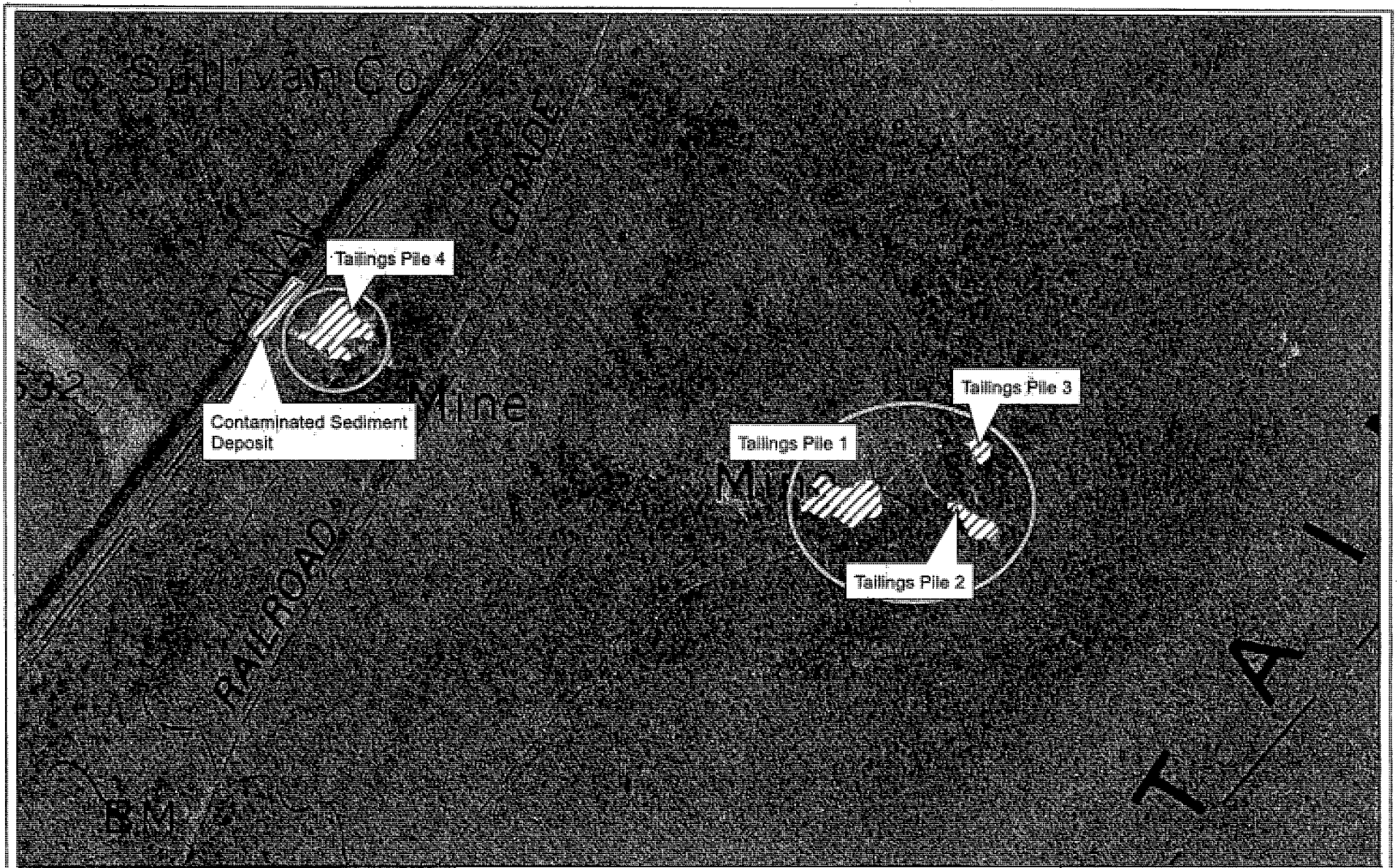


Figure 2:
Wurtsboro Ridge State Forest
Abandoned Lead Mine Site Map
Town of Mamakating, Sullivan County, New York

APPENDIX 1

Table 1: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS001-3036-01	P001-SS001-4248-01	P001-SS002-4248-01	P001-SS002-5460-01	P001-SS003-4551-01	P001-SS003-5763-01	P001-SS004-3137-01	P001-SS004-4349-01	P001-SS005-3339-01	P001-SS005-4551-01	P001-SS006-1622-01
Sampling Date			11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/10/2015
Sample Depth (Inches)			30-36	42-48	42-48	54-60	45-51	57-63	31-37	43-49	33-39	45-51	16-22
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	10,000	4,800	8,800	15,000	7,800	7,200	17,000	7,900	13,000	6,500	8,400
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	1.5	ND	0.87	1.1	1.0	ND	3.2	0.97	1.8	ND	2.8
Barium	46,000	450[3]	86	82	83	260	74	72	250	120	140	50	220
Beryllium	470	14	0.50	0.29	0.43	1.2	0.37	0.43	1.1	0.57	0.89	0.50	ND
Cadmium	210	2.5[3]	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	1.9
Calcium	NS	NS	160	100	210	480	230	240	630	260	590	160	880
Chromium	NS*	NS**	11	6.0	10	18	9.3	8.9	19	10	14	8.5	9.8
Cobalt	70	NS	4.7	3.0	5.1	8.8	5.2	4.6	7.5	5.5	7.6	5.0	15
Copper	9,400	270	4.8	4.7	2.0	13	2.9	4.3	8.8	9.2	7.5	5.6	27
Iron	160,000	NS	8,500	5,800	8,700	15,000	8,900	8,600	9,400	9,200	11,000	7,700	4,500
Lead	400	400	61	8.4	110	50	66	25	200	10	65	13	270
Magnesium	NS	NS	2,100	1,400	2,000	3,600	2,100	2,000	2,100	2,100	2,800	1,700	600
Manganese	5,500	2,000[3]	70	54	78	140	83	75	82	82	110	63	51
Nickel	4,600	140	11	8.5	12	23	13	12	14	14	17	12	11
Potassium	NS	NS	350	270	390	760	400	410	850	410	580	320	400
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	12	5.1	10	17	7.9	8.4	17	11	15	9.5	15
Zinc	70,000	2,200	1,800	630	910	2,200	910	670	3,100	960	2,500	990	26,000
Mercury	28	0.81[4]	NA	NA	ND	0.063	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS006-3440-01	P001-SS006-4652-01	P001-SS006-4652-02	P001-SS008-2026-01	P001-SS008-4248-01	P001-SS008-5460-01	P001-SS009-5662-01	P001-SS009-6874-01	P001-SS009-6874-02	P001-SS010-4652-01	P001-SS010-5864-01
Sampling Date			11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015
Sample Depth (Inches)			34-40	46-52	46-52	20-26	42-48	54-60	56-62	68-74	68-74	46-52	58-64
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,300	4,600	4,900	7,800	8,000	5,800	8,200	4,800	5,200	8,600	10,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	0.98	ND	0.91	4.5	0.85	1.0	1.3	2.1	1.5	1.2	1.7
Barium	46,000	450[3]	88	35	37	270	120	47	80	24	26	65	75
Beryllium	470	14	0.64	0.32	0.34	1.4	0.57	0.27	0.56	ND	ND	0.49	0.60
Cadmium	210	2.5[3]	ND	ND	ND	13	ND	ND	ND	ND	ND	ND	ND
Calcium	NS	NS	380	250	240	1,300	320	110	490	100	120	340	260
Chromium	NS*	NS**	9.9	5.8	6.3	8.4	9.2	7.4	10	6.1	6.6	10	12
Cobalt	70	NS	4.1	4.3	4.3	14	5.1	4.9	5.0	5.1	5.6	4.1	5.3
Copper	9,400	270	9.5	8.7	11	37	6.4	3.9	11	5.8	5.5	4.5	6.2
Iron	160,000	NS	6,800	6,400	6,400	3,700	8,000	9,300	9,100	8,100	8,200	7,600	9,200
Lead	400	400	320	14	14	650	280	12	23	13	11	110	110
Magnesium	NS	NS	1,700	1,500	1,500	470	1,900	1,800	2,300	1,600	1,700	1,700	2,200
Manganese	5,500	2,000[3]	63	60	60	35	72	76	81	62	67	68	80
Nickel	4,600	140	10	9.5	9.8	13	12	12	14	11	12	11	13
Potassium	NS	NS	460	310	340	440	350	260	500	310	330	410	490
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.1	6.4	6.8	13	8.6	6.2	10	5.1	5.8	9.9	13
Zinc	70,000	2,200	1,300	790	800	39,000	1,500	490	1,500	560	610	440	1,000
Mercury	28	0.81[4]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
ND - Non-detect
NA - Not analyzed
NS - Not specified
No - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)
*No specified EPA RML for total chromium, EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium, NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]For constituents where the calculated SCO is was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[4]This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 1: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS011-3541-01	P001-SS011-4753-01	P001-SS012-2430-01	P001-SS012-3642-01	P001-SS013-2531-01	P001-SS013-3642-01	P001-SS013-4854-01	P001-SS014-2632-01	P001-SS014-4147-01	P001-SS014-5359-01	P001-SS016-2026-01
Sampling Date			11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015
Sample Depth (Inches)			35-41	47-53	24-30	36-42	25-31	36-42	48-54	26-32	41-47	53-59	20-26
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,900	6,700	11,000	6,700	5,500	12,000	9,000	5,400	11,000	7,700	5,600
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	0.81	0.80	1.3	1.0	5.7	2.2	ND	2.4	1.4	ND	4.6
Barium	46,000	350[3]	38	45	91	48	340	100	85	160	80	52	270
Beryllium	470	14	0.31	0.49	0.61	0.47	1.4	0.81	0.64	0.53	0.53	0.35	1.4
Cadmium	210	2.5[3]	ND	ND	ND	ND	7.1	ND	ND	2.2	ND	ND	12
Calcium	NS	NS	160	190	500	240	2,100	460	620	870	290	220	1,700
Chromium	NS*	NS**	7.3	8.6	13	8.5	7.1	14	10	6.8	12	8.7	5.8
Cobalt	70	NS	4.0	4.3	5.7	4.1	11	6.6	3.6	6.3	5.4	4.4	14
Copper	9,400	270	2.8	5.5	5.8	5.8	26	6.9	6.5	8.5	5.7	3.0	33
Iron	160,000	NS	6,800	7,600	9,500	7,600	14,000	11,000	7,000	3,700	8,900	7,600	8,900
Lead	400	400	64	48	210	25	1,900	280	440	330	120	140	1,800
Magnesium	NS	NS	1,500	1,600	2,200	1,700	250	2,500	1,600	410	2,100	1,700	370
Manganese	5,500	2,000[3]	60	67	100	71	200	110	82	63	79	66	88
Nickel	4,600	140	9.3	11	14	11	14	15	9.9	6.7	12	10	12
Potassium	NS	NS	300	340	590	370	370	620	490	310	470	370	440
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	7.5	9.7	12	8.4	ND	16	9.0	5.9	12	7.9	ND
Zinc	70,000	2,200	270	230	390	130	11,000	730	260	5,700	1,300	760	31,000
Mercury	28	0.81[3]	NA	NA	0.040	NA	ND	NA	NA	ND	ND	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS016-3541-01	P001-SS016-4855-01	P001-SS017-1521-01	P001-SS017-4349-01	P001-SS017-5561-01	P001-SS017-5561-02	P001-SS018-6066-01	P001-SS018-7278-01	P001-SS018-7278-02	P001-SS019-5360-01	P001-SS019-6672-01
Sampling Date			11/10/2015	11/10/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015
Sample Depth (Inches)			35-41	48-55	15-21	43-49	55-61	55-61	60-66	72-78	72-78	54-60	66-72
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,000	7,300	330	10,000	6,000	4,700	3,900	4,100	4,100	4,900	4,900
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	0.87	0.96	16	1.8	1.1	0.96	1.6	1.5	1.2	0.82 J	ND
Barium	46,000	350[3]	74	76	ND	81	33	45	35	19	19	51	43
Beryllium	470	14	0.59	0.54	ND	0.68	0.45	0.51	ND	ND	ND	0.34	0.34
Cadmium	210	2.5[3]	ND	ND	ND	ND	ND	0.97	ND	ND	ND	ND	ND
Calcium	NS	NS	450	550	ND	270	260	200	180	87	88	470	290
Chromium	NS*	NS**	10	9.1	0.56	11	7.5	6.9	4.9	5.2	5.0	6.3	6.0
Cobalt	70	NS	5.2	4.9	ND	3.8	2.4	2.2	3.8	3.5	3.6	2.7	2.6
Copper	9,400	270	11	9.3	18	4.2	5.4	5.4	3.5	3.3	2.9	4.7	3.9
Iron	160,000	NS	9,000	8,300	2,600	6,600	4,200	3,800	4,900	3,900	3,800	5,100	5,100
Lead	400	400	24	16	5,000	450	640	940	52	85	85	80	110
Magnesium	NS	NS	2,100	2,000	ND	1,600	980	860	1,100	1,400	1,300	1,200	1,200
Manganese	5,500	2,000[3]	82	79	ND	61	41	38	43	47	46	68	59
Nickel	4,600	140	14	13	ND	9.4	6.0	6.0	7.2	8.3	8.4	7.8	7.4
Potassium	NS	NS	410	370	390	570	380	270	210	210	210	260	250
Selenium	1,200	36	ND	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	10	9.2	ND	13	5.6	4.5	4.5	4.1	3.9	5.8	5.4
Zinc	70,000	2,200	190	88	210	2,200	1,000	970	710	2,300	1,800	64	66
Mercury	28	0.81[3]	NA	NA	3.7	0.043	NA	NA	NA	NA	NA	ND	ND

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
ND - Non-detect
NA - Not analyzed
NS - Not specified
No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]Part 375 is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 1: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS020-2026-01	P001-SS020-3541-01	P001-SS020-4753-01	P001-SS021-3642-01	P001-SS021-6066-01	P001-SS021-7278-01	P001-SS022-2632-01	P001-SS022-6066-01	P001-SS022-7278-01	P001-SS024-2632-01	P001-SS024-4147-01
Sampling Date			11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015
Sample Depth (Inches)			20-26	35-41	47-53	36-42	60-66	72-78	26-32	60-66	72-78	26-32	41-47
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,300	7,400	9,200	4,600	11,000	8,800	3,600	8,100	12,000	5,600	8,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	7.9	3.1	1.4	8.8	2.0	1.5	ND	1.3	3.4	ND	ND
Barium	46,000	350[3]	200	130	84	300	140	86	92	100	160	130	63
Beryllium	470	14	1.2	1.2	0.63	1.9	0.92	0.65	ND	0.68	1.1	0.66	0.56
Cadmium	210	2.5[3]	0.9	ND	ND	75	0.41	0.71	2.3	0.98	2.2	8.0	ND
Calcium	NS	NS	1,600	980	700	2,000	1,000	930	2,000	1,300	2,600	1,600	480
Chromium	NS*	NS**	5.1	8.3	11	5.8	13	11	4.7	11	15	6.9	9.9
Cobalt	70	NS	14	ND	4.3	15	5.9	6.3	2.6	4.9	11	5.9	4.1
Copper	9,400	270	23	7.7	7.6	56	15	13	5.3	15	23	17	5.3
Iron	160,000	NS	7,800	3,800	7,900	8,300	10,000	9,900	4,300	8,300	11,000	6,100	7,100
Lead	400	400	1,500	940	530	2,200	97	36	440	54	140	1,100	390
Magnesium	NS	NS	240	550	1,900	380	2,500	2,400	730	2,000	3,000	450	1,600
Manganese	5,500	2,000[3]	160	100	100	160	140	120	190	120	140	130	72
Nickel	4,600	140	17	4.7	12	15	16	17	5.2	14	24	7.7	11
Potassium	NS	NS	340	600	560	450	530	430	180	400	760	330	400
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	7.8	8.5	ND	14	11	4.3	11	14	5.6	9.4
Zinc	70,000	2,200	14,000	190	460	28,000	180	180	430	150	690	7,600	93
Mercury	28	0.81[4]	NA	NA	NA	0.13	0.044	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS024-5460-01	P001-SS025-4147-01	P001-SS025-5359-01	P001-SS026-3642-01	P001-SS026-3642-02	P001-SS026-4854-01	P001-SS026-6066-01	P001-SS027-3844-01	P001-SS027-4450-01	P001-SS027-5662-01	P001-SS028-2026-01
Sampling Date			11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/9/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015
Sample Depth (Inches)			54-60	41-47	53-59	36-42	36-42	48-54	60-66	38-44	44-50	56-62	20-26
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,800	6,300	5,600	5,100	4,800	7,100	11,000	4,900	7,700	12,000	5,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	ND	ND	ND	ND	2.7	0.83	1.4	ND	1.2	2.4	
Barium	46,000	350[3]	72	120	30	260	270	37	120	410	73	190	330
Beryllium	470	14	0.56	0.73	ND	1.8	1.3	0.45	0.97	4.2	0.40	1.3	1.4
Cadmium	210	2.5[3]	ND	ND	ND	6.0	6.0	0.32	0.35	19	ND	ND	11
Calcium	NS	NS	520	680	210	4,500	4,800	460	830	3,600	620	1,900	4,400
Chromium	NS*	NS**	11	6.3	7.6	5.6	4.6	9.5	14	5.8	8.8	11	5.8
Cobalt	70	NS	5.7	ND	3.3	ND	ND	4.3	5.8	ND	2.7	ND	13
Copper	9,400	270	7.6	3.1	4.5	16	18	9.7	16	30	3.0	13	22
Iron	160,000	NS	9,300	2,600	7,500	7,100	9,600	9,000	11,000	15,000	5,900	2,900	9,000
Lead	400	400	110	510	120	1,400	1,300	42	200	1,700	190	980	2,400
Magnesium	NS	NS	2,300	650	1,700	710	650	2,200	2,800	400	1,600	910	580
Manganese	5,500	2,000[3]	90	44	64	280	330	86	110	430	93	130	660
Nickel	4,600	140	15	4.1	9.5	14	12	13	17	23	8.7	5.4	22
Potassium	NS	NS	460	570	240	430	400	350	500	200	410	880	340
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	12	6.2	7.7	ND	ND	10	16	ND	6.4	8.2	5.9
Zinc	70,000	2,200	180	160	180	2,200	2,400	210	390	8900	180	320	7,800
Mercury	28	0.81[4]	NA	NA	NA	NA	NA	NA	NA	0.087	ND	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
ND - Non-detect
NA - Not analyzed
NS - Not specified
No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)
*No specified EPA RML for total chromium. EPA RML s for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]The SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 1: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS028-4248-01	P001-SS028-5460-01	P001-SS029-4046-01	P001-SS029-5258-01	P001-SS029-6470-01	P001-SS031-3844-01	P001-SS031-4652-01	P001-SS031-6066-01	P001-SS032-3036-01	P001-SS032-4248-01	P001-SS032-4248-02
Sampling Date			11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/9/2015	11/9/2015	11/9/2015
Sample Depth (Inches)			42-48	54-60	40-46	52-58	64-70	38-44	46-52	60-66	30-36	42-48	42-48
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,400	8,700	4,500	4,900	8,000	4,900	17,000	13,000	13,000	12,000	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	1.0	ND	3.8	1.1	ND	1.8	2.0	1.3	4.1	2.7	2.2
Barium	46,000	350[3]	54	67	190	35	81	140	310	200	220	380	370
Beryllium	470	14	0.44	0.53	0.88	ND	0.44	ND	3.0	2.6	6.4	4.4	4.2
Cadmium	210	2.5[3]	ND	ND	6.9	0.98	0.50	5.9	1.0	0.38	6.5	4.1	3.2
Calcium	NS	NS	500	610	2,100	150	570	2,800	1,600	590	1,400	3,400	3,300
Chromium	NS*	NS**	9.8	11	5.7	3.8	10	5.8	17	14	13	14	13
Cobalt	70	NS	4.4	4.4	5.4	3.2	4.6	ND	4.0	3.1	12	7.8	ND
Copper	9,400	270	8.1	8.9	18	18	8.2	10	26	15	67	31	23
Iron	160,000	NS	8,800	9,700	8,700	5,900	9,700	5,000	8,700	7,300	11,000	7,300	6,500
Lead	400	400	19	22	1,500	390	23	1,000	330	190	1,700	1,400	1,300
Magnesium	NS	NS	2,100	2,300	420	1,300	2,400	1,100	2,300	1,900	2,100	1,200	1,200
Manganese	5,500	2,000[3]	100	110	500	65	100	130	140	80	240	320	200
Nickel	4,600	140	13	13	10	7.4	14	9.2	18	15	21	18	17
Potassium	NS	NS	370	390	330	240	410	290	1,500	1,100	1,000	1,000	940
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.4	12	5.4	5.8	9.2	6.4	17	13	16	8.3	7.5
Zinc	70,000	2,200	91	110	6,200	720	140	1,200	540	520	7,400	1,600	1,500
Mercury	28	0.81[4]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS033-4248-01	P001-SS033-5460-01	P001-SS034-4248-01	P001-SS034-5460-01	P001-SS035-4854-01	P001-SS035-6066-01	P001-SS036-2228-01	P001-SS036-3642-01	P001-SS036-4854-01	P001-SS037-4147-01	P001-SS037-5359-01
Sampling Date			11/9/2015	11/9/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/9/2015	11/9/2015
Sample Depth (Inches)			42-48	54-60	42-48	54-60	48-54	60-66	22-28	36-42	48-54	41-47	53-59
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	17,000	15,000	17,000	7,600	16,000	10,000	9,100	13,000	9,000	20,000	21,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	2.0	0.91	1.6	ND	1.4	ND	1.8	1.4	1.1	1.9	2.0
Barium	46,000	350[3]	380	190	310	66	310	110	360	240	170	310	320
Beryllium	470	14	3.6	1.5	2.3	0.45	2.5	0.88	3.4	2.7	0.98	4.9	4.8
Cadmium	210	2.5[3]	2.9	ND	ND	ND	ND	ND	11	1.1	0.44	ND	ND
Calcium	NS	NS	2,400	1,100	2,400	450	2,200	800	5,200	1,900	970	2,200	1,900
Chromium	NS*	NS**	14	17	16	9.7	17	12	9.4	14	11	18	20
Cobalt	70	NS	ND	2.9	ND	3.3	ND	3.2	ND	ND	ND	ND	ND
Copper	9,400	270	23	14	12	4.8	14	8.8	23	29	10	13	20
Iron	160,000	NS	3,700	6,900	4,400	8,100	4,700	7,300	4,500	3,600	4,200	4,500	5,600
Lead	400	400	2,900	490	1,000	89	940	290	1,200	1,200	150	740	920
Magnesium	NS	NS	1,100	2,000	1,200	1,900	1,300	2,000	920	1,300	1,300	1,500	1,800
Manganese	5,500	2,000[3]	120	73	240	80	270	120	210	98	52	95	84
Nickel	4,600	140	12	13	7.9	11	9.3	11	16	10	8.3	12	14
Potassium	NS	NS	1,400	1,000	1,300	330	1,200	580	850	1,100	750	1,600	1,700
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.4	13	9.7	9.4	9.0	9.8	7.6	7.7	8.7	11	14
Zinc	70,000	2,200	2,100	490	420	260	280	350	3,300	580	210	420	510
Mercury	28	0.81[4]	0.087	0.064	NA	NA	NA	NA	0.077	0.27	NA	0.11	0.15

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
ND - Non-detect
NA - Not analyzed
NS - Not specified
No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)
*No specified EPA RML for total chromium; EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium; NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 1: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS038-4349-01	P001-SS038-5661-01	P001-SS039-3844-01	P001-SS039-5056-01	P001-SS040-3036-01	P001-SS040-4046-01	P001-SS040-5258-01
Sampling Date			11/9/2015	11/9/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015
Sample Depth (Inches)			43-49	56-61	38-44	50-56	30-36	40-46	52-58
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal									
Aluminum	230,000	NS	8,900	10,000	7,900	5,300	10,000	7,500	6,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	2.9	2.9	1.6	1.3	1.8	1.0	ND
Barium	46,000	350[3]	110	120	140	36	350	120	63
Beryllium	470	14	3.8	4.8	0.99	ND	3.4	0.56	ND
Cadmium	210	2.5[3]	48	19	1.3	ND	3.0	ND	ND
Calcium	NS	NS	420	450	1,000	190	1,900	480	220
Chromium	NS*	NS**	8.7	9.9	9.1	6.8	10	10	7.4
Cobalt	70	NS	8.0	6.9	ND	2.5	ND	ND	ND
Copper	9,400	270	22	35	5.3	1.8	22	5.9	6.2
Iron	160,000	NS	9,500	11,000	4,300	7,700	3,500	3,400	3,900
Lead	400	400	600	680	190	21	620	70	23
Magnesium	NS	NS	1,500	1,800	540	1,400	750	970	1,100
Manganese	5,500	2,000[3]	110	110	140	53	310	55	46
Nickel	4,600	140	15	17	4.2	6.5	12	6.6	5.9
Potassium	NS	NS	640	730	680	400	820	700	450
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	12	13	7.8	8.9	5.3	8.2	8.3
Zinc	70,000	2,200	5,000	7,300	700	70	920	160	180
Mercury	28	0.81[3]	NA	NA	0.045	ND	NA	NA	NA

Notes:

RST 3 - Removal Support Team 3

TAL - Target Analyte List

All soil analytical results reported in milligrams per kilogram (mg/kg)

J - Indicates the reported value is an estimate

ND - Non-detect

NA - Not analyzed

NS - Not specified

No - Number

[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)

[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)

*No specified EPA RML for total chromium; EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium

**No specified NYSDEC RUSCO for total chromium; NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium

[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site

[3]The SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)

Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil

Values in red equal or exceed the respective EPA RML for Residential Soil

Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2A: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS041-0612-01	P001-SS041-1723-01	P001-SS041-2935-01	P001-SS042-0612-01	P001-SS042-1419-01	P001-SS042-1924-01	P001-SS043-0309-01	P001-SS043-1521-01	P001-SS043-2834-01	P001-SS044-0208-01	P001-SS044-1218-01
Sampling Date			11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015
Sample Depth (Inches)			6-12	17-23	29-35	6-12	14-19	19-24	3-9	15-21	28-34	2-8	12-18
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	220	8,000	15,000	1,700	8,200	13,000	590	4,200	13,000	380	4,000
Antimony	94	NS	3.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.5
Arsenic	68	16[3]	11	19	2.3	25	16	2.2	10	24	1.4	4.0	18
Barium	46,000	350[3]	ND	380	300	19	190	200	ND	73	160	ND	79
Beryllium	470	14	ND	ND	1.0	0.42	1.0	0.97	ND	0.92	0.61	ND	2.5
Cadmium	210	2.5[3]	55	10	0.67	20	3.5	ND	ND	1.7	ND	1.8	24
Calcium	NS	NS	ND	4,100	1,200	120	2,300	1,100	ND	290	510	ND	750
Chromium	NS*	NS**	ND	10	17	4.4	9.9	13	1.6	5.9	15	0.70	5.1
Cobalt	70	NS	17	12	7.4	3.1	10	5.0	ND	ND	7.7	ND	5.1
Copper	9,400	270	670	62	16	510	23	5.4	60	280	7.9	55	520
Iron	160,000	NS	3,600	7,800	11,000	2,500	10,000	7,900	3,600	4,900	12,000	1,100	6,500
Lead	400	400	310	1,000	280	3,200	870	180	960	4,500	190	1,100	8,800
Magnesium	NS	NS	ND	510	2,700	110	850	1,400	59	700	2,800	ND	330
Manganese	5,500	2,000[3]	2.9	110	110	5.1	72	73	3.2	34	110	1.9	32
Nickel	4,600	140	2.6	17	18	2.8	13	11	ND	6.0	17	ND	8.9
Potassium	NS	NS	260	440	650	390	360	470	280	400	590	230	650
Selenium	1,200	36	ND	ND	ND	4.5	ND	ND	ND	ND	ND	ND	4.3
Silver	1,200	36	3.3	ND	ND	5.1	ND	ND	1.3	1.1	ND	0.75	3.3
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	ND	14	3.8	9.5	12	1.9	4.7	17	ND	5.6
Zinc	70,000	2,200	36,000	34,000	3,300	6,400 J	11,000	570	160	3,700	1,800	880	22,000
Mercury	28	0.81[4]	1.2	0.14	NA	4.8	NA	NA	NA	NA	NA	1.6	2.9

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS044-1218-02	P001-SS044-2430-01	P001-SS045-0107-01	P001-SS045-1218-01	P001-SS045-2430-01	P001-SS046-0107-01	P001-SS046-1218-01	P001-SS046-2934-01	P001-SS047-1218-01	P001-SS047-2428-01	P001-SS048-0107-01
Sampling Date			11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015	11/10/2015
Sample Depth (Inches)			12-18	24-30	1-7	12-18	24-30	1-7	12-18	29-34	12-18	24-28	1-7
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,100	7,400	14,000	5,900	9,100	9,300	6,300	8,000	1,300	5,100	14,000
Antimony	94	NS	6.3	ND	4.7	ND	ND	7.9	ND	ND	ND	ND	ND
Arsenic	68	16[3]	20	2.0	16	8.2	1.2	24	6.2	1.0	4.5	5.6	29
Barium	46,000	350[3]	97	140	48	210	87	140	200	81	ND	200	88
Beryllium	470	14	3.7	ND	9.6	1.6	0.42	7.5	1.6	0.44	0.49	2.1	8.4
Cadmium	210	2.5[3]	49	1.8	2.5	7.0	ND	53	6.2	0.36	6.5	9.1	33
Calcium	NS	NS	880	1,100	290	2,100	380	1,000	1,700	470	ND	2,400	890
Chromium	NS*	NS**	5.8	8.6	11	7.0	11	11	7.6	9.9	1.6	6.4	14
Cobalt	70	NS	5.2	4.4	4.8	8.4	5.9	14	7.1	4.4	ND	6.5	ND
Copper	9,400	270	540	17	1,500	110	6.1	690	140	9.3	120	68	1,400
Iron	160,000	NS	8,700	6,300	17,000	10,000	9,400	12,000	8,600	8,200	2,100	9,600	38,000
Lead	400	400	11,000	350	18,000	2,500	150	16,000	2,600	140	740	2,100	29,000
Magnesium	NS	NS	370	1,100	1,600	560	2,100	1,600	690	1,800	180	790	2,100
Manganese	5,500	2,000[3]	34	57	72	130	91	86	85	77	7.2	97	100
Nickel	4,600	140	10	11	17	14	13	22	12	11	ND	14	25
Potassium	NS	NS	720	390	1,200	470	430	1,300	560	410	290	520	1,400
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10
Silver	1,200	36	3.0	ND	2.7	ND	ND	3.8	ND	ND	1.1	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	6.6	7.7	16	ND	11	13	6.5	11	ND	6.6	36
Zinc	70,000	2,200	28000	7,200	2,300	14,000	750	36,000	9,000	740	2,400	5,000	4,000
Mercury	28	0.81[4]	2.1	NA	3.8	0.75	NA	NA	NA	NA	NA	NA	2.0

Notes:

RST 3 - Removal Support Team 3

TAL - Target Analyte List

All soil analytical results reported in milligrams per kilogram (mg/kg)

J - Indicates the reported value is an estimate

ND - Non-detect

NA - Not analyzed

NS - Not specified

No. - Number

[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)

[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)

*No specified EPA RML for total chromium; EPA RML a for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium

**No specified NYSDEC RUSCO for total chromium; NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium

[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site

[4]This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)

Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil

Values in red equal or exceed the respective EPA RML for Residential Soil

Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil.

Table 2A: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS048-1218-01	P001-SS049-0107-01	P001-SS049-0713-01	P001-SS049-1319-01	P001-SS050-0107-01	P001-SS050-0713-01	P001-SS050-1319-01	P001-SS051-0107-01	P001-SS051-0713-01	P001-SS051-1319-01	P001-SS052-0107-01
Sampling Date			11/10/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Sample Depth (Inches)			12-18	1-7	7-13	13-19	1-7	7-13	13-19	1-7	7-13	13-19	1-7
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	12,000	1,100	1,600	6,700	470	850	6,100	1,800	2,600	4,600	1,100
Antimony	94	NS	ND	5.8	10	ND	ND	ND	ND	5.2	12	ND	ND
Arsenic	68	16[3]	14	22	42	6.1	8.3	5.0	6.6	8.9	61	25	12
Barium	46,000	350[3]	170	16	32	230	12	28	170	49	29	150	49
Beryllium	470	14	6.9	ND	ND	1.2	ND	ND	0.84	ND	ND	ND	ND
Cadmium	210	2.5[3]	46	39	31	28	1.5	9.9	34	3.0	130	3.9	0.62
Calcium	NS	NS	1,500	120	190	1,100	100	290	720	310	98	730	600
Chromium	NS*	NS**	9.3	5.4	9.7	9.2	3.2	2.1	9.2	6.3	7.9	8.1	2.5
Cobalt	70	NS	13	8.6	15	ND	ND	ND	ND	ND	42	ND	ND
Copper	9,400	270	880	680	820	96	320	260	480	370	2700	530	50
Iron	160,000	NS	22,000	5,700	9,500	5,800	1,700	2,100	6,800	3,900	13,000	9,100	3,700
Lead	400	400	13,000	11,000	16,000	1,800	3,700	2,000	1,700	15,000	42,000	6,800	1,700
Magnesium	NS	NS	1,100	60	77	770	ND	86	620	100	130	220	210
Manganese	5,500	2,000[3]	140	10	27	39	1.9	4.5	31	6.1	9.0	16	12
Nickel	4,600	140	23	2.9	5.4	8.3	ND	ND	7.4	ND	9.2	ND	ND
Potassium	NS	NS	960	660	1,300	490	300	360	480	910	1,200	1,800	450
Selenium	1,200	36	ND	6.4	9.8	ND	2.5	ND	ND	11	36	ND	ND
Silver	1,200	36	ND	6.4	13	ND	2.1	1.2	ND	11	28	15	1.5
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	13	2.3	2.9	6.5	ND	ND	6.2	3.7	2.6	ND	3.2
Zinc	70,000	2,200	8,800	19,000	26,000	5,200	840	2,000	6,200	1,400	57,000	5,900	390
Mercury	28	0.81[4]	0.35	8.3	28	NA	NA	NA	NA	13	13	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SS052-0713-01	P001-SS052-0713-02	P001-SS052-1319-01	P001-SS052-1925-01	P001-SS053-0107-01	P001-SS053-0713-01	P001-SS053-1319-01	P001-SS053-1925-01	P001-SS053-2531-01	P001-SS054-0107-01	P001-SS054-0713-01
Sampling Date			11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Sample Depth (Inches)			7-13	7-13	13-19	19-25	1-7	7-13	13-19	19-25	25-31	1-7	7-13
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	330	540	690	14,000	800	330	380	310	280	1,100	3,800
Antimony	94	NS	ND	3.1	2.4	ND	ND	ND	ND	ND	ND	ND	7.9
Arsenic	68	16[3]	9.2	18	13	2.3	3.9	9.4	13	8.9	10	13	48
Barium	46,000	350[3]	ND	ND	ND	230	18	ND	ND	ND	ND	17	41
Beryllium	470	14	ND	ND	ND	1.1	ND	ND	ND	ND	ND	ND	ND
Cadmium	210	2.5[3]	11	24	19	0.46	1.7	1.8	1.6	3.0	3.5	4.1	30
Calcium	NS	NS	ND	ND	ND	560	96	190	ND	ND	ND	71	63
Chromium	NS*	NS**	1.0	1.6	1.7	17	1.4	0.89	1.1	0.97	1.7	3.3	9.1
Cobalt	70	NS	2.0	5.6	4.7	7.0	ND	ND	ND	ND	ND	ND	14
Copper	9,400	270	800	750	370	13	77	47	84	54	57	220	1,300
Iron	160,000	NS	1,400	3,000	2,700	9,000	990	980	1,400	1,200	1,400	2,700	14,000
Lead	400	400	3,700	7,600	4,600	210	810	1,400	1,700	1,200	1,300	5,500	25,000
Magnesium	NS	NS	ND	ND	50	2,000	88	120	ND	ND	ND	130	360
Manganese	5,500	2,000[3]	0.83	1.6	2.4	82	3.5	2.9	2.0	1.6	2.0	5.8	13
Nickel	4,600	140	ND	ND	ND	14	ND	ND	ND	ND	ND	ND	4.6
Potassium	NS	NS	300	390	390	600	260	250	280	290	250	420	1,500
Selenium	1,200	36	2.1	8.1	4.5	ND	ND	ND	ND	ND	ND	3.9	20
Silver	1,200	36	2.1	4.1	3.2	ND	1.1	0.80	1.3	0.89	0.83	3.1	18
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	ND	ND	14	ND	ND	ND	ND	ND	3.9	5.8
Zinc	70,000	2,200	4,800	12,000	9,600	4,300	1,800	1,100	1,200	2,200	2,500	2,400	23,000
Mercury	28	0.81[4]	NA	NA	NA	NA	1.3	1.0	NA	NA	NA	NA	NA

Notes:

RST 3 - Removal Support Team 3

TAL - Target Analyte List

All soil analytical results reported in milligrams per kilogram (mg/kg)

J - Indicates the reported value is an estimate

ND - Non-detect

NA - Not analyzed

NS - Not specified

No. - Number

[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)

[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)

*No specified EPA RML for total chromium; EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium

**No specified NYSDEC RUSCO for total chromium; NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium

[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site

[4]This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)

Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil

Values in red equal or exceed the respective EPA RML for Residential Soil

Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2A: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[2]	NYSDEC RUSCO[3]	P001-SS054-1319-01	P001-SS058-0107-01	P001-SS058-0713-01	P001-SS059-0107-01	P001-SS059-0713-01	P001-SS059-1319-01	P001-SS060-0107-01	P001-SS060-0713-01	P001-SS060-1319-01	P001-SS060-1925-01	P001-SS060-1925-02
Sampling Date			11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015	11/11/2015
Sample Depth (Inches)			13-19	1-7	7-13	1-7	7-13	13-19	1-7	7-13	13-19	19-25	19-25
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	13,000	10,000	15,000	7,700	11,000	13,000	12,000	12,000	6,700	6,300	8,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[4]	3.7	2.7	1.8	30	11	1.7	ND	3.4	ND	ND	2.6
Barium	46,000	350[4]	190	230	240	190	240	150	160	380	330	300	330
Beryllium	470	14	0.89	1.1	0.90	2.1	1.1	0.81	9.7	7.2	2.1	2.3	3.0
Cadmium	210	2.5[4]	14	4.1	1.1	32	7.2	0.37	19	48	11	16	17
Calcium	NS	NS	400	1,400	1,300	1,900	2,600	1,000	2,300	2,300	2,600	1,900	1,800
Chromium	NS*	NS**	14	11	16	11	13	15	13	14	8.2	7.7	9.3
Cobalt	70	NS	5.1	ND	4.6	ND	6.7	6.3	ND	10	10	8.6	9.0
Copper	9,400	270	97	45	12	650	72	8.8	2,400	480	63	83	100
Iron	160,000	NS	8,000	3,800	8,100	13,000	11,000	11,000	12,000	7,900	2,900	4,200	4,400
Lead	400	400	540	1,400	240	10,000	1,600	320	23,000	6,300	2,000	2,600	2,800
Magnesium	NS	NS	1,600	620	1,800	710	1,400	2,600	2,000	1,500	870	860	950
Manganese	5,500	2,000[4]	57	35	74	54	84	110	71	95	86	66	66
Nickel	4,600	140	10	9.1	13	16	16	16	30	30	27	25	27
Potassium	NS	NS	540	620	730	1,100	690	570	1,500	1,200	500	580	710
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	4.4	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	13	10	14	16	13	16	17	15	8.0	7.7	8.5
Zinc	70,000	2,200	6,800	2,500	1,600	8,400	4,300	490	4,800	11,000	8,800	6,700	7,900
Mercury	28	0.81[5]	NA	NA	NA	NA	NA	NA	1.5	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
ND - Non-detect
NA - Not analyzed
NS - Not specified
No. - Number
[2]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[3]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2016)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[5]This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SCA42-0006-01	P001-SCA42-3036-01	P001-SCB42-0006-01	P001-SCB42-1824-01	P001-SCB42-3036-01	P001-SCC42-0006-01	P001-SCC42-0006-02	P001-SCC42-1824-01	P001-SCC42-3036-01	P001-SCC43-0006-01	P001-SCC43-1824-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)			0-6	30-36	0-6	18-24	30-36	0-6	0-6	18-24	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	5,700	8,900	9,300	7,700	14,000	13,000	9,200	17,000	7,400	7,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	5.9	ND	6.5	10	21	11	10	3.5	1.2	10	6.9
Barium[3]	46,000	350	94	61	32	47	38	170	170	60	100	260	44
Beryllium	470	14	7.6	0.79	3.6	6.9	7.9	8.5	8.8	2.5	2.8	3.5	3.2
Cadmium[3]	210	2.5	1.5	0.81	ND	0.49	1.0	1.5	1.6	0.50	0.52	2.5	0.43
Calcium	NS	NS	240	440	180	150	110	500	500	270	730	2,100	150
Chromium	NS*	NS**	11	8.3	10	13	8.7	17	17	13	20	10	9.7
Cobalt	70	NS	10	5.9	35	35	20	36	50	4.1	2.8	15	33
Copper	9,400	270	250	15	140	82	85	170	180	59	72	56	39
Iron	160,000	NS	11,000	6,000	14,000	28,000	53,000	19,000	18,000	14,000	6,500	13,000	14,000
Lead	400	400	21,000	960	11,000	10,000	9,600	21,000	23,000	3,800	4,100	8,000	4,500
Magnesium	NS	NS	880	1,300	1,200	1,300	910	1,900	1,700	1,700	1,800	1,200	1,400
Manganese[4]	5,500	2,000	330	190	2,000	1,700	1,500	1,700	2,500	100	68	570	1,700
Nickel	4,600	140	13	9.9	9.0	8.4	6.3	18	17	11	12	17	9.8
Potassium	NS	NS	780	390	610	830	710	1,000	1,000	920	1,800	1,000	610
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	2.3	ND	1.0	ND	ND	1.2	1.4	ND	ND	2.6	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	17	7.1	13	21	10	23	23	15	14	22	13
Zinc	70,000	2,200	740	860	450	780	1,000	860	860	860	1,100	1,100	710
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SCC43-1824-02	P001-SCC43-3036-01	P001-SCD42-0006-01	P001-SCD42-1824-01	P001-SCD42-3036-01	P001-SCD43-0006-01	P001-SCD43-1824-01	P001-SCD43-3036-01	P001-SCD44-0006-01	P001-SCD44-1824-01	P001-SCD44-3036-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)			18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,300	9,000	9,800	15,000	14,000	11,000	9,300	13,000	17,000	3,900	3,700
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	6.2	5.9	7.4	ND	1.4	7.0	0.89	1.3	11	12	5.4
Barium[3]	46,000	350	60	70	81	75	90	320	52	84	260	80	48
Beryllium	470	14	4.2	3.5	3.3	6.8	3.9	5.3	2.0	4.0	4.9	2.2	1.2
Cadmium[3]	210	2.5	0.50	0.88	0.71	ND	0.69	5.1	0.40	0.63	3.3	2.0	0.84
Calcium	NS	NS	190	280	400	440	810	1,300	490	860	1,200	280	220
Chromium	NS*	NS**	10	12	12	16	16	14	12	16	26	7.8	7.0
Cobalt	70	NS	53	33	ND	ND	ND	49	2.2	2.9	44	34	5.6
Copper	9,400	270	49	63	79	120	76	86	45	80	72	36	25
Iron	160,000	NS	15,000	17,000	14,000	3,000	7,700	19,000	6,900	9,800	24,000	18,000	9,800
Lead	400	400	6,200	5,700	9,000	10,000	6,100	13,000	2,700	4,400	5,600	3,100	1,100
Magnesium	NS	NS	1,200	1,800	1,800	1,000	1,400	1,300	1,800	2,500	2,300	470	820
Manganese[4]	5,500	2,000	2,300	2,500	63	26	35	57	47	66	1,900	1,300	220
Nickel	4,600	140	9.4	13	13	9.6	11	24	10	18	24	5.4	6.0
Potassium	NS	NS	720	860	870	1,300	1,100	1,200	830	1,000	1,300	280	330
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	0.57	ND	ND	2.7	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	14	14	18	9.8	12	19	9.9	23	24	12	9.3
Zinc	70,000	2,200	790	940	580	920	820	1,700	650	920	1,700	570	450
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 390,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SCE42-0006-01	P001-SCE42-3036-01	P001-SCE43-0006-01	P001-SCE43-3036-01	P001-SCE44-0006-01	P001-SCE44-0006-02	P001-SCE44-3036-01	P001-SCF42-0006-01	P001-SCF42-1824-01	P001-SCF42-3036-01	P001-SCF43-0006-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	30-36	0-6	30-36	0-6	0-6	30-36	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	13,000	9,300	15,000	17,000	19,000	17,000	7,600	18,000	11,000	9,900
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	ND	1.8 J	ND	ND	ND	ND
Barium[4]	46,000	350	220	160	520	250	290	380	200	340	250	160	390
Beryllium	470	14	0.9	3.4	1.4	4.9	1.3	1.4	3.7	0.6	5.3	2.3	0.8
Cadmium[4]	210	2.5	2.5	0.60	12	3.8	9.6	12	0.84	0.8	6.0	7.0	1.3
Calcium	NS	NS	2,200	1,400	6,800	3,000	2,800	3,100	2,200	3,800	2,800	2,200	4,600
Chromium	NS*	NS**	11	18	11	22	10	22	24	8.3	27	16	12
Cobalt	70	NS	ND	ND	11	ND	ND	ND	ND	ND	ND	ND	ND
Copper	9,400	270	93	69	91	77	140	140	110	53	76	50	67
Iron	160,000	NS	2,600	4,200	6,600	4,300	7,400	8,400	6,300	2,800	3,200	4,600	4,700
Lead	400	400	13,000	4,700	22,000	7,800	11,000	22,000	2,800	9,700	7,800	1,800	8,800
Magnesium	NS	NS	820	1,500	1,700	1,600	1,600	1,800	1,900	980	1,400	1,600	1,000
Manganese[5]	5,500	2,000	11	45	360	35	56	67	58	22	32	50	27
Nickel	4,600	140	21	12	60	21	37	41	20	34	16	16	38
Potassium	NS	NS	1,100	1200	1800	1,400	1,400	1,600	1,600	930	1,800	900	940
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	1.4	ND	ND	ND	ND	1.1	ND	2.6	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	9.2	ND	9.8	17	20	16	ND	12	9.3	11
Zinc	70,000	2,200	1,200	800	3,600	1,800	2,400	3,500	980	1,900	1,000	940	2,200
Mercury[6]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.45

RST 3 Sample No.			P001-SCF43-3036-01	P001-SCF44-0006-01	P001-SCF44-1218-01	P001-SCF44-1218-02	P001-SCF44-1824-01	P001-SCF44-3036-01	P001-SCG41-0006-01	P001-SCG41-0006-02	P001-SCG41-1218-01	P001-SCG41-3036-01	P001-SCG42-0006-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	12-18	12-18	18-24	30-36	0-6	0-6	12-18	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	13,000	11,000	22,000	14,000	22,000	19,000	7,200	6,400	4,500	12,000	6,600
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	3.4	ND	2.3	ND	ND	1.2 J	1.3	ND
Barium[4]	46,000	350	170	260	100	160	230	200	170	120	87	80	360
Beryllium	470	14	2.7	0.9	3.3	3.9	2.2	2.7	3.7	2.6	2.6	0.56	0.5
Cadmium[4]	210	2.5	1.4	12	ND	12	ND	1.5	2.5	1.5	1.5	1.2	12
Calcium	NS	NS	1,600	3,100	1,400	1,600	2,000	1,600	1,200	720	630	690	6,100
Chromium	NS*	NS**	18	33	29	20	30	25	8.9	7.7	4.6	14	6.6
Cobalt	70	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.1	ND
Copper	9,400	270	49	78	31	54	74	51	56	42	34	19	52
Iron	160,000	NS	2,500	6,300	6,600	4,700	8,400	7,800	6,500	5,000	4,300	12,000	3,000
Lead	400	400	1,500	13,000	1,900	1,800	760	1,300	12,000	7,200	4,900	380	9,200
Magnesium	NS	NS	950	890	1,500	1,000	2,400	1,600	1,200	1,100	850	3,300	1,200
Manganese[5]	5,500	2,000	17	30	27	24	47	29	45	37	30	120	24
Nickel	4,600	140	11	34	12	15	18	16	16	11	11	18	44
Potassium	NS	NS	1,200	880	1,400	960	1,500	1,500	660	630	320	700	860
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.4	12	19	13	16	19	10	8.2	4.4	11	ND
Zinc	70,000	2,200	450	4,200	450	1,600	550	580	800	510	500	1,100	3,000
Mercury[6]	28	0.81	0.31	0.47	0.36	0.28	0.37	0.44	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO. For compounds where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]
[5]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SCG42-1824-01	P001-SCG42-3036-01	P001-SCG43-0006-01	P001-SCG43-1824-01	P001-SCG43-3036-01	P001-SCG44-0006-01	P001-SCG44-3036-01	P001-SCH41-0006-01	P001-SCH41-3036-01	P001-SCH42-0006-01	P001-SCH42-1824-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	30-36	0-6	18-24	30-36	0-6	30-36	0-6	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	9,000	20,000	15,000	18,000	24,000	18,000	22,000	7,500	9,400	4,400	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.2	1.9	ND	2.0	3.1	2.9 J	2.6	ND	ND	ND	ND
Barium[3]	46,000	350	91	300	380	160	280	360	200	230	74	410	150
Beryllium	470	14	0.60	1.8	4.7	3.0	3.6	5.5	2.5	5.9	0.38	3.6	1.7
Cadmium[3]	210	2.5	4.2	6.4	5.8	1.6	2.4	6.7	0.54	4.4	0.77	6.9	5.5
Calcium	NS	NS	1,100	2,500	2,900	1,700	2,700	2,600	2,000	1,200	510	5,000	1,400
Chromium	NS*	NS**	11	20	15	21	29	17	24	8.1	12	3.9	13
Cobalt	70	NS	3.3	ND	ND	ND	ND	ND	ND	ND	4.6	ND	ND
Copper	9,400	270	14	29	28	34	55	31	28	66	9.1	42	25
Iron	160,000	NS	7,500	6,900	3,700	2,400	4,700	3,700	7,500	2,300	9,300	4,300	2,500
Lead	400	400	1,000	750	2,100	1,200	1,400	1,900	450	9,400	160	6,100	2,200
Magnesium	NS	NS	2,200	2,600	1,000	1,000	1,800	1,200	2,500	580	2,500	1,000	980
Manganese[3]	5,500	2,000	77	79	19	18	38	25	58	20	90	27	28
Nickel	4,600	140	13	16	22	11	19	25	17	15	14	30	7.6
Potassium	NS	NS	650	1,700	1400	1,100	1,900	1,500	1,700	810	470	1,100	850
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.6	16	11	12	18	13	22	11	10	ND	7.0
Zinc	70,000	2,200	1,500	1,300	1,100	450	940	1,000	400	880	470	2,200	860
Mercury[4]	28	0.81	NA	NA	0.34	0.28	0.44	0.65	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SCH43-3036-01	P001-SCH43-0006-01	P001-SCH43-1824-01	P001-SCH43-3036-01	P001-SCH44-0006-01	P001-SCH44-1218-01	P001-SCH44-3036-01	P001-SCI41-0006-01	P001-SCI41-3036-01	P001-SCI42-0006-01	P001-SCI42-3036-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	18-24	30-36	0-6	12-18	30-36	0-6	30-36	0-6	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,600	11,000	15,000	9,100	12,000	37,000	5,900	3,900	6,600	4,800	8,800
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	ND	1.6	ND	0.79	ND	1.1
Barium[3]	46,000	350	41	350	370	56	510	300	64	330	49	480	67
Beryllium	470	14	ND	4.6	3.3	0.39	3.7	3.2	0.97	4.9	ND	7.2	0.45
Cadmium[3]	210	2.5	3.1	7.5	3.0	ND	7.3	3.4	2.6	7.8	1.3	11	NJ
Calcium	NS	NS	370	4,200	3,300	570	6,000	3,600	960	2,600	170	5,700	400
Chromium	NS*	NS**	8.0	10	13	11	11	31	7.2	41	8.2	ND	11
Cobalt	70	NS	3.1	ND	ND	3.6	ND	ND	ND	ND	3.4	ND	4.4
Copper	9,400	270	7.5	38	49	7.4	27	42	20	75	13	79	7.8
Iron	160,000	NS	7,100	5,700	2,000	7,900	4,100	4,300	1,900	2,300	6,800	3,200	9,200
Lead	400	400	150	5,900	4,000	350	1,400	1,600	500	11,000	50	28,000	21
Magnesium	NS	NS	1,800	1,200	1,100	2,300	1,300	2,200	640	630	1,700	990	2,400
Manganese[3]	5,500	2,000	62	21	17	74	25	30	21	32	62	28	80
Nickel	4,600	140	10	34	17	13	34	17	6.3	21	10	40	14
Potassium	NS	NS	340	1,300	1,300	550	1,300	2,400	390	570	370	680	440
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	7.4	11	11	8.3	13	28	7.1	ND	7.4	ND	12
Zinc	70,000	2,200	410	1,900	1,700	480	1,600	670	890	1500	340	2,700	250
Mercury[4]	28	0.81	NA	0.67	0.47	0.12	0.63	NA	0.094	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
h - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation's Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium, EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium, NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SC143-0006-01	P001-SC143-1824-01	P001-SC143-1824-02	P001-SC143-3036-01	P001-SC144-0006-01	P001-SC144-1824-01	P001-SC144-3036-01	P001-SC145-0006-01	P001-SC145-3036-01	P001-SC141-0006-01	P001-SC141-3036-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	18-24	30-36	0-6	18-24	30-36	0-6	30-36	0-6	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,900	12,000	11,000	8,500	5,100	19,000	6,100	1,300	17,000	3,400	4,900
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	ND	ND	ND	0.96	ND	ND	ND	ND	2.6	ND	ND
Barium[a]	46,000	350	420	450	200	63	510	310	32	87	340	280	36
Beryllium	470	14	4.7	4.9	2.2	0.39	3.6	2.0	ND	ND	2.1	1.8	ND
Cadmium[a]	210	2.5	13	8.2	9.4	ND	15	1.7	1.3	ND	1.2	3.1	ND
Calcium	NS	NS	4,000	3,500	2,600	520	5,600	2,700	290	2,100	1,700	1,900	180
Chromium	NS*	NS**	3.8	9.8	13	10	4.2	16	6.9	1.7	25	4.4	6.3
Cobalt	70	NS	ND	ND	ND	3.9	ND	ND	2.7	ND	2.6	ND	3.0
Copper	9,400	270	68	73	71	7.0	34	21	4.9	7.0	56	25	5.6
Iron	160,000	NS	2,700	1,400	2,800	8,300	2,200	2,100	6,100	1,200	7,900	4,000	5,900
Lead	400	400	13,000	7,000	6,200	80	2,900	1,400	64	54	300	2,600	16
Magnesium	NS	NS	830	1,000	1,200	2,300	980	1,300	1,600	410	2,100	600	1,500
Manganese[a]	5,500	2,000	17	23	42	77	25	16	53	130	55	26	54
Nickel	4,600	140	30	15	15	13	30	12	8.9	6.5	21	14	8.7
Potassium	NS	NS	670	1,200	880	500	760	1,700	320	810	1,300	680	280
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	7.9	11	8.4	ND	15	6.4	ND	16	ND	6.2
Zinc	70,000	2,200	2,100	1,600	1,100	320	2,700	760	250	98	270	1,100	260
Mercury[b]	28	0.81	0.43	0.48	0.37	NA	0.32	0.48	NA	NA	NA	0.22	NA

RST 3 Sample No.			P001-SC142-0006-01	P001-SC142-3036-01	P001-SC143-0006-01	P001-SC143-1824-01	P001-SC143-3036-01	P001-SC144-0006-01	P001-SC144-0006-02	P001-SC144-1824-01	P001-SC144-3036-01	P001-SC145-0006-01	P001-SC145-3036-01
Sampling Date			12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	30-36	0-6	18-24	30-36	0-6	0-6	18-24	30-36	0-6	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,800	7,700	3,200	5,900	8,200	3,300	3,300	13,000	5,900	3,000	3,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	ND	0.85 J	ND	ND	ND	ND	ND	1.6	0.87 J	ND	1.3
Barium[a]	46,000	350	360	84	310	180	130	350	380	210	64	150	77
Beryllium	470	14	3.6	0.45	2.1	1.2	0.71	ND	1.7	2.0	0.54	ND	ND
Cadmium[a]	210	2.5	8.4	0.73	7.1	12	3.0	30	24	ND	ND	ND	ND
Calcium	NS	NS	4,500	450	3,100	1,400	920	6,000	6,600	1,600	500	840	370
Chromium	NS*	NS**	ND	7.9	4.1	4.7	8.5	ND	ND	11	7.9	4.5	4.5
Cobalt	70	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	9,400	270	51	6.7	18	19	8.5	43	37	14	8.3	24	5.5
Iron	160,000	NS	3,700	4,200	3,200	820	2,300	2,300	2,600	3,100	4,400	2,500	1,800
Lead	400	400	13,000	600	3,500	2,400	1,000	2,500	2,600	1,600	170	69	21
Magnesium	NS	NS	840	1,100	910	480	860	970	1,000	970	1,200	610	500
Manganese[a]	5,500	2,000	23	35	20	9.2	25	32	35	28	38	29	20
Nickel	4,600	140	29	6.7	20	5.4	6.0	24	25	6.6	6.1	26	3.0
Potassium	NS	NS	1100	380	750	630	690	570	540	1,000	560	940	390
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	8.3	ND	4.5	6.9	ND	ND	9.3	7.6	ND	3.2
Zinc	70,000	2,200	2,300	420	2,100	670	570	4,100	3,500	400	220	320	69
Mercury[b]	28	0.81	NA	NA	NA	NA	NA	NA	NA	0.26	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg).
J - Indicates the reported value is an estimate.
K - Indicates the reported value may be biased high.
ND - Non-detect. NA - Not analyzed. NS - Not specified. No. - Number.
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006).
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[b]NYSDEC RUSCO - this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil.
Values in red equal or exceed the respective EPA RML for Residential Soil.
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil.

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SCK41-0006-01	P001-SCK41-0612-01	P001-SCK41-1824-01	P001-SCK41-3036-01	P001-SCK42-0006-01	P001-SCK42-0612-01	P001-SCK42-1824-01	P001-SCK42-3036-01	P001-SCK43-0006-01	P001-SCK43-1218-01	P001-SCK43-2430-01
Sampling Date			12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015
Sample Depth (Inches)	EPA RMLs for		0-6	6-12	18-24	30-36	0-6	6-12	18-24	30-36	0-6	12-18	24-30
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,800	7,100	5,800	4,600	7,600	12,000	4,100	5,100	9,600	10,000	9,400
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium[4]	46,000	350	350	160	49	34	510	400	86	56	370	150	130
Beryllium	470	14	4.6	0.83	ND	ND	10	3.4	ND	ND	3.1	0.90	0.59
Cadmium[5]	210	2.5	4.0	1.1	ND	ND	16	6.1	4.7	1.2	5.0	2.5	8.6
Calcium	NS	NS	2,000	700	250	180	3,700	2,800	1,000	550	3,700	1,600	1,100
Chromium	NS*	NS**	9.6	8	7.3	6.1	6.1	12	6.6	7.8	8.7	14	12
Cobalt	70	NS	ND	ND	3.1	2.8	ND	ND	ND	2.6	ND	ND	2.9
Copper	9,400	270	33	5.8	3.5	3.6	82	41	13	15	46	17	15
Iron	160,000	NS	2,300	2,000	6,500	5,800	1,700	1,500	1,800	4,900	1,700	4,500	5,500
Lead	400	400	4,700	1000	39	22	14,000	5,100	1,000	200	4,900	1,900	1,300
Magnesium	NS	NS	590	430	1,500	1,300	730	790	580	1,200	860	1,500	1,700
Manganese[4]	5,500	2,000	32	17	57	51	25	30	27	48	17	51	56
Nickel	4,600	140	14	4.1	9.9	8.7	31	17	6.6	8.8	18	12	11
Potassium	NS	NS	740	380	260	260	670	720	260	280	930	720	580
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	6.9	5.7	5.7	4.7	ND	9.4	4.1	5.5	ND	8.6	8.7
Zinc	70,000	2,200	1,300	410	200	75	2,800	1,700	1,000	700	1,700	830	730
Mercury[6]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SCK43-3036-01	P001-SCK44-0006-01	P001-SCK44-0612-01	P001-SCK44-1824-01	P001-SCK44-3036-01	P001-SCK45-0006-01	P001-SCK45-3036-01	P001-SCL41-0006-01	P001-SCL41-1218-01	P001-SCL41-3036-01	P001-SCL42-0612-01
Sampling Date			12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/15/2015	12/15/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015
Sample Depth (Inches)	EPA RMLs for		30-36	0-6	6-12	18-24	30-36	0-6	30-36	0-6	12-18	30-36	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,500	10,000	9,200	6,600	5,400	8,400	8,500	7,200	6,900	5,100	9,600
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	6.6	8.0	ND	1.1	ND	ND
Barium[4]	46,000	350	40	250	220	41	33	88	65	200	130	31	320
Beryllium	470	14	ND	1.6	1.1	ND	0.27	0.95	0.61	2.8	0.52	ND	2.6
Cadmium[5]	210	2.5	1.1	3.3	ND	0.28	ND	0.58	ND	2.4	0.57	ND	2.1
Calcium	NS	NS	360	3,500	2,300	330	260	360	220	1,100	480	140	2,300
Chromium	NS*	NS**	6.1	19	8.1	8.6	7.5	9.0	10	6.3	7.4	7.1	10
Cobalt	70	NS	2.4	ND	ND	3.1	2.8	5.9	6.6	ND	1.9	3.7	ND
Copper	9,400	270	4.9	26	12	4.0	4.6	41	32	50.0	4.1	3.4	26
Iron	160,000	NS	5,200	5,700	2,400	7,200	6,700	22,000	14,000	2,500	4,000	7,200	2,100
Lead	400	400	200	1,400	930	95	27	89	71	3,800	630	27	2,900
Magnesium	NS	NS	1,300	1,500	780	1,700	1,500	1,200	2,300	610	570	1,400	680
Manganese[4]	5,500	2,000	47	43	15	59	53	150	230	25	26	62	27
Nickel	4,600	140	7.9	20	5.8	10	9.2	14	13	9.1	4.0	8.9	12
Potassium	NS	NS	250	920	830	320	260	820	630	650	490	230	670
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	5.1	12	7.2	8.4	7.0	13	12	8.2	9.1	6.4	6.7
Zinc	70,000	2,200	480	1,100	250	220	120	150	130	710	430	130	1,200
Mercury[6]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect. NA - Not analyzed. NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO: For constituents where the calculated SCO is lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[5]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SC1-42-1218-01	P001-SC1-42-2430-01	P001-SC1-42-3036-01	P001-SC1-43-1218-01	P001-SC1-43-1824-01	P001-SC1-43-3036-01	P001-SC1-44-0006-01	P001-SC1-44-1218-01	P001-SC1-44-3036-01	P001-SC1-45-0006-01	P001-SC1-45-1824-01
Sampling Date			12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/2/2015	12/15/2015	12/15/2015	12/15/2015	12/14/2015	12/14/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	12-18	24-30	30-36	12-18	18-24	30-36	0-6	12-18	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	9,800	5,000	4,400	3,000	5,900	6,000	7,800	8,300	1,500	9,500
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	ND	0.83 J	ND	ND	ND	0.76	ND	ND	ND	ND	3.1
Barium[a]	46,000	350	260	130	47	130	41	39	350	170	100	110	75
Beryllium	470	14	1.9	0.56	0.28	1.3	ND	ND	2.1	0.88	0.62	ND	ND
Cadmium[a]	210	2.5	4.6	0.31	1.4	4.6	3.9	0.85	5.5	ND	ND	ND	ND
Calcium	NS	NS	2,000	760	360	2,100	570	330	4,200	1,600	920	730	250
Chromium	NS*	NS**	13	12	6.7	5.2	4.4	7.7	6.0	5.7	11	ND	10
Cobalt	70	NS	ND	3.8	2.3	ND	ND	3.5	ND	ND	ND	ND	2.8
Copper	9,400	270	21	10	8.7	25	7.2	7.8	24	9.1	12	9.5	9.9
Iron	160,000	NS	3,100	7,700	5,300	1,000	1,800	7,000	3,800	2,500	4,900	1,500	13,000
Lead	400	400	2,000	350	160	2,900	650	27	1,500	690	1,100	870	36
Magnesium	NS	NS	950	2,000	1,300	420	520	1,700	920	590	1,300	490	1,700
Manganese[a]	5,500	2,000	40	75	48	10	19	65	20	14	52	64	43
Nickel	4,600	140	12	12	7.7	8.6	3.9	10	22	4.9	8.9	10	8.6
Potassium	NS	NS	710	530	290	350	210	360	870	800	620	1,200	460
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.7	9.7	6.5	ND	3.7	7.0	ND	6.2	6.8	ND	13
Zinc	70,000	2,200	1100	670	290	720	570	450	1,300	190	370	340	69
Mercury[b]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.27	NA

RST 3 Sample No.			P001-SC1-45-3036-01	P001-SCM41-1824-01	P001-SCM41-3036-01	P001-SCM42-0006-01	P001-SCM42-0612-01	P001-SCM42-1824-01	P001-SCM42-3036-01	P001-SCM43-0006-01	P001-SCM43-0612-01	P001-SCM43-1824-01	P001-SCM43-1824-02
Sampling Date			12/14/2015	12/2/2015	12/2/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	18-24	30-36	0-6	6-12	18-24	30-36	0-6	6-12	18-24	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,700	6,400	7,000	2,000	4,000	8,600	5,900	6,700	6,500	6,200	5,700
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	2.2	ND	0.72	ND	ND	ND	ND	ND	ND	ND	ND
Barium[a]	46,000	350	72	72	68	330	260	170	80	210	57	45	42
Beryllium	470	14	0.37	ND	0.36	2.0	2.6	0.54	0.39	1.4	0.26	0.28	ND
Cadmium[a]	210	2.5	ND	0.58	ND	5.6	16	5.7	0.71	2.5	ND	ND	0.55
Calcium	NS	NS	250	270	340	4,300	1,800	1,100	640	1,200	300	270	240
Chromium	NS*	NS**	11	8.2	9.6	ND	6.6	11	7.7	5.7	8.5	8.5	7.8
Cobalt	70	NS	2.2	3.3	4.4	ND	ND	2.4	2.5	ND	2.7	3.4	3.2
Copper	9,400	270	13	2.7	7.6	35	45	5.7	11	18	4.3	8.0	6.0
Iron	160,000	NS	11,000	6,700	8,500	3,300	1,000	3,800	5,100	2,100	6,500	7,500	7,400
Lead	400	400	49	58	13	6,900	5,300	840	470	2,100	120	26	49
Magnesium	NS	NS	1,800	1,500	1,800	960	400	1,100	1,300	540	1,400	1,600	1,500
Manganese[a]	5,500	2,000	38	57	69	30	11	38	48	13	51	57	55
Nickel	4,600	140	9.2	9.4	13	21	16	7.9	9.0	8.4	8.7	10	9.6
Potassium	NS	NS	570	310	330	820	ND	610	400	760	290	290	300
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	13	7.7	9.3	ND	ND	7.4	6.8	6.8	9.2	8.3	8.0
Zinc	70,000	2,200	70	330	140	1,900	1,600	780	540	600	270	130	370
Mercury[b]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Recalculated Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 850,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[b]NYSDEC RUSCO - this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SCM43-3036-01	P001-SCM44-0006-01	P001-SCM44-1218-01	P001-SCM44-3036-01	P001-SCM45-0006-01	P001-SCM45-3036-01	P001-SCN41-0006-01	P001-SCN41-1218-01	P001-SCN41-3036-01	P001-SCN42-0006-01	P001-SCN42-1824-01
Sampling Date			12/3/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/2/2015	12/2/2015	12/2/2015	12/3/2015	12/3/2015
Sample Depth (Inches)			30-36	0-6	12-18	30-36	0-6	30-36	0-6	12-18	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,400	18,000	4,900	6,000	1,600	12,000	3,700	6,400	5,700	1,900	9,100
Antimony	94	NS	ND	ND	ND	ND	5.0	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	4.5	0.92	2.7	4.8	5.4	ND	0.84	ND	ND	ND
Barium[4]	46,000	350	55	390	60	23	80	27	46	87	46	350	170
Beryllium	470	14	0.39	1.6	ND	0.36	ND	0.44	ND	0.26	0.26	1.9	0.69
Cadmium[5]	210	2.5	ND	1.2	ND	ND	ND	ND	0.36	0.45	ND	12	1.7
Calcium	NS	NS	330	1,200	390	350	100	ND	310	360	180	3,300	980
Chromium	NS*	NS**	10	14	3.8	8.1	4.1	12	5.0	8.5	7.8	5.1	11
Cobalt	70	NS	4.0	ND	ND	3.0	ND	5.3	ND	2.5	3.6	ND	2.9
Copper	9,400	270	9.8	26	1.0	7.8	9.1	14	4.8	2.1	5.8	30	6.1
Iron	160,000	NS	9,200	6,500	1,800	11,000	3,800	17,000	3,700	5,000	7,000	2,700	5,500
Lead	400	400	25	560	100	49	1,100	42	260	230	18	4500	830
Magnesium	NS	NS	1,800	1,500	320	1,600	120	2,500	860	1,000	1,400	960	1,200
Manganese[6]	5,500	2,000	67	40	11	59	21	110	32	41	58	32	48
Nickel	4,600	140	12	15	ND	8.4	4.9	15	5.0	6.8	10	19	8.5
Potassium	NS	NS	370	2,400	390	440	310	440	250	340	280	1700	670
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	10	17	4.1	9.5	10	16	4.1	8.3	7.9	ND	9.5
Zinc	70,000	2,200	98	470	120	84	40	120	130	480	110	2400	710
Mercury[7]	28	0.81	NA	NA	NA	NA	0.18	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SCN43-3036-01	P001-SCN43-0006-01	P001-SCN43-0612-01	P001-SCN43-1824-01	P001-SCN43-3036-01	P001-SCN44-0006-01	P001-SCN44-1218-01	P001-SCN44-3036-01	P001-SCO41-0006-01	P001-SCO41-1218-01	P001-SCO41-3036-01
Sampling Date			12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/15/2015	12/15/2015	12/15/2015	12/2/2015	12/2/2015	12/2/2015
Sample Depth (Inches)			30-36	0-6	6-12	18-24	30-36	0-6	12-18	30-36	0-6	12-18	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,000	7,600	9,300	8,600	6,300	7,400	5,000	7,900	2,800	4,000	5,800
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	0.80	ND	1.8	2.7	ND	1.2	ND
Barium[4]	46,000	350	100	380	270	72	54	210	16	17	270	130	43
Beryllium	470	14	0.50	2.7	2.5	0.35	ND	1.3	ND	0.38	1.3	1.5	ND
Cadmium[5]	210	2.5	0.52	20	7.5	0.79	ND	3.5	ND	ND	3.2	2.8	0.82
Calcium	NS	NS	600	4,900	3,300	620	390	1,700	150	450	2,900	1,000	190
Chromium	NS*	NS**	7.9	8.4	9.3	11	8.4	5.6	6.1	12	ND	3.8	7.9
Cobalt	70	NS	2.4	ND	ND	3.6	3.6	ND	1.7	2.8	ND	ND	3.5
Copper	9,400	270	7.1	60	32	11	7.0	25	1.9	11.00	25	20	3.3
Iron	160,000	NS	4,700	2,700	3,400	7,900	7,600	2,200	8,400	15,000	3,000	2,800	7,000
Lead	400	400	620	3,900	3,000	490	46	580	39	51	2,900	2,300	81
Magnesium	NS	NS	1,100	990	1,000	2,100	1,800	510	1,300	2,000	540	310	1,500
Manganese[6]	5,500	2,000	44	28	32	76	68	32	37	75	41	18	60
Nickel	4,600	140	7.7	28	15	12	11	19	5.6	9.2	15	6.6	9.8
Potassium	NS	NS	330	890	990	550	400	620	260	440	ND	250	270
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	7.0	13	8.5	8.1	6.8	11	9.1	13	11	3.8	7.9
Zinc	70,000	2,200	760	4,000	1,300	450	330	620	57	70	1,500	530	300
Mercury[7]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium, EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium, NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SC042-0006-01	P001-SC042-1824-01	P001-SC042-3036-01	P001-SC043-0006-01	P001-SC043-1824-01	P001-SC043-3036-01	P001-SC044-0006-01	P001-SC044-3036-01	P001-SC P41-0006-01	P001-SC P41-1218-01	P001-SC P41-3036-01
Sampling Date			12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/14/2015	12/14/2015	12/2/2015	12/2/2015	12/2/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	30-36	0-6	18-24	30-36	0-6	30-36	0-6	12-18	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	1,600	8,600	4,400	2,600	11,000	7,900	9,000	12,000	5,000	5,800	6,300
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	ND	ND	3.1	0.85	ND	2.4
Barium[3]	46,000	350	360	120	48	220	200	110	240	59	67	47	54
Beryllium	470	14	ND	0.49	ND	ND	0.70	0.57	ND	0.46	ND	0.28	0.57
Cadmium[3]	210	2.5	3.6	ND	ND	2.2	ND	0.95	12	ND	ND	ND	ND
Calcium	NS	NS	5,600	470	180	3,900	1,200	690	2,300	220	230	200	230
Chromium	NS[4]	NS[4]	ND	11	5.8	3.3	14	11	41	18	4.1	7.6	8.6
Cobalt	70	NS	ND	3.7	2.6	ND	3.2	3.1	ND	5.6	ND	2.9	3.6
Copper	9,400	270	18	1.9	2.6	18	6.9	9.1	20	12	1.8	3.4	7.3
Iron	160,000	NS	3,900	7,500	5,800	3,400	6,500	6,800	1,700	20,000	1,800	6,300	9,400
Lead	400	400	4,100	220	28	1,360	900	650	1,300	25	190	33	14
Magnesium	NS	NS	1,200	1,700	1,300	1,100	1,700	1,700	830	3,800	300	1,300	1,400
Manganese[3]	5,500	2,000	27	66	51	32	65	65	18	120	9.8	49	55
Nickel	4,600	140	24	10	7.8	17	10	10	16	20	ND	8.4	9.8
Potassium	NS	NS	ND	470	270	1,100	850	540	770	660	250	260	320
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	13	5.0	ND	9.0	8.3	ND	15	5.2	7.9	12
Zinc	70,000	2,200	2,500	560	180	1,300	520	640	2,500	150	230	210	160
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SCP42-0006-01	P001-SCP42-1824-01	P001-SCP42-3036-01	P001-SCP43-0006-01	P001-SCP43-3036-01	P001-SCP45-0006-01	P001-SCP45-0612-01	P001-SCP45-1824-01	P001-SCP45-3036-01	P001-SCQ41-0006-01	P001-SCQ41-1218-01
Sampling Date			12/2/2015	12/2/2015	12/2/2015	12/15/2015	12/15/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/2/2015	12/2/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	30-36	0-6	30-36	0-6	6-12	18-24	30-36	0-6	12-18
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	1,800	6,600	12,000	2,200	5,100	8,200	8,000	12,000	8,700	4,600	8,900
Antimony	94	NS	ND	ND	ND	ND	ND	2.4	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	0.763	1.9	ND	ND	15	4.7	8.0	6.7	ND	1.2
Barium[3]	46,000	350	430	110	230	300	37	41	160	260	110	270	170
Beryllium	470	14	ND	0.39	0.69	ND	ND	0.80	3.0	7.8	1.8	2.1	0.51
Cadmium[3]	210	2.5	1.9	0.58	0.63	3.5	ND	ND	1.1	5.4	0.61	3.6	1.4
Calcium	NS	NS	4,800	280	370	4,700	250	75	200	880	310	2,000	760
Chromium	NS[4]	NS[4]	4.1	8.1	18	ND	6.2	9.6	8.7	13	9.9	4.8	9.2
Cobalt	70	NS	ND	3.7	8.4	ND	3.1	5.6	11	18	7.1	ND	2.4
Copper	9,400	270	23	6.9	12	21	6.2	9.8	7.5	23	7.0	26	2.2
Iron	160,000	NS	1,600	7,300	17,000	3,300	6,600	13,000	12,000	17,000	14,000	2,200	5,000
Lead	400	400	2,900	57	33	3,800	53	840	320	550	99	2,600	260
Magnesium	NS	NS	990	1,600	3,000	990	1,600	940	910	1,600	1,800	490	960
Manganese[3]	5,500	2,000	33	63	140	27	60	250	1,300	2,100	460	25	58
Nickel	4,600	140	19	11	22	20	9.2	6.3	6.8	18	12	12	6.2
Potassium	NS	NS	1,100	250	490	730	280	530	480	800	560	380	400
Selenium	1,700	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	8.9	18	ND	4.7	23	12	17	13	6.9	11
Zinc	70,000	2,200	4,600	370	170	1,600	140	350	590	1,900	550	1,000	540
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	0.087	0.050	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil (subsequently re-named either a Hi[1] risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2013)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
[3]No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 390,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
[4]No specified NYSDEC RUSCO for total Chromium. NYSDEC Recommended Protection SCOs for Residential Soil are 30 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[5]NYSDEC RUSCO - For constituents where the calculated SCO was lower than the typical soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[6]NYSDEC RUSCO - this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SCQ41-3036-01	P001-SCQ41-3036-02	P001-SCQ42-0006-01	P001-SCQ42-3036-01	P001-SCQ43-0006-01	P001-SCQ43-1824-01	P001-SCQ43-3036-01	P001-SCQ44-0006-01	P001-SCQ44-1218-01	P001-SCQ44-3036-01	P001-SCQ45-0006-01
Sampling Date			12/2/2015	12/2/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/14/2015	12/14/2015	12/14/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	30-36	0-6	30-36	0-6	18-24	30-36	0-6	12-18	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,300	6,500	1,200	6,200	1,400	6,700	4,700	6,300	9,600	5,500	9,400
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	0.69 J	0.77	ND	ND	ND	ND	ND	ND	1.5	ND	ND
Barium[4]	46,000	350	75	78	390	91	190	93	31	320	150	31	580
Beryllium	470	14	0.43	0.41	ND	0.29	ND	ND	0.28	2.5	1.5	0.31	3.2
Cadmium[4]	210	2.5	ND	ND	2.3	ND	ND	ND	ND	5.6	0.46	ND	45
Calcium	NS	NS	300	320	5,600	310	3,100	440	170	3,200	860	220	4,700
Chromium	NS*	NS**	8.6	8.5	ND	7.4	ND	7.1	7.4	7.2	11	7.4	7.5
Cobalt	70	NS	4.1	4.0	ND	3.0	ND	2.7	3.2	ND	ND	3.1	ND
Copper	9,400	270	9.0	7.6	11	2.8	11	2.1	5.5	32	7.7	5.4	29
Iron	160,000	NS	8,100	7,900	5,900	6,600	2,600	4,900	6,400	3,200	4,600	7,600	3,800
Lead	400	400	9.0	11	1,000	8.4	1,200	1.20	36	1,900	670	46	1,500
Magnesium	NS	NS	1,700	1,700	1,400	1,400	820	1,100	1,400	800	1,100	1,700	1,100
Manganese[4]	5,500	2,000	67	65	62	54	20	42	58	50	53	60	21
Nickel	4,600	140	12	12	18	8.3	ND	6.4	9.5	22	7.4	9.4	35
Potassium	NS	NS	310	300	1,400	290	570	310	210	1,000	800	260	1,000
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.6	8.8	ND	7.7	ND	10	7.8	ND	11	7.9	ND
Zinc	70,000	2,200	60	85	2,100	300	820	360	110	1,400	500	100	5,900
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	0.19	NA	NA

RST 3 Sample No.			P001-SCQ45-1824-01	P001-SCQ45-3036-01	P001-SCR41-0006-01	P001-SCR41-1218-01	P001-SCR41-3036-01	P001-SCR42-0006-01	P001-SCR42-1218-01	P001-SCR42-3036-01	P001-SCR43-0006-01	P001-SCR43-0612-01	P001-SCR43-1824-01
Sampling Date			12/15/2015	12/15/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/3/2015	12/3/2015	12/3/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	30-36	0-6	12-18	30-36	0-6	12-18	30-36	0-6	6-12	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,700	4,200	3,100	10,000	8,800	1,500	7,300	6,700	1,700	3,400	6,700
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16	2.1	0.91 J	5.6	0.86	ND	ND	1.4	0.89	ND	ND	ND
Barium	46,000	350	64	39	150	91	150	180	140	80	230	340	410
Beryllium	470	14	0.33	ND	1.5	0.35	0.48	1.3	0.36	0.39	ND	1.8	3.7
Cadmium[4]	210	2.5	ND	ND	2.7	ND	ND	6.9	0.59	ND	7.0	7.9	13
Calcium	NS	NS	230	150	1,400	410	610	1,700	510	290	4,700	5,400	5,500
Chromium	NS*	NS**	11	4.8	4.9	11	10	1.8	6.9	8.8	ND	2.9	5.3
Cobalt	70	NS	3.4	ND	ND	4.6	3.8	ND	2.0	4.6	ND	ND	ND
Copper	9,400	270	11	1.6	26	3.2	4.7	16	1.9	4.4	17	43	49
Iron	160,000	NS	15,000	5,500	2,300	9,300	7,900	1,000	4,000	7,800	2,200	2,600	2,600
Lead	400	400	44	21	2,200	81	64	1,200	270	32	1,200	3,000	4,100
Magnesium	NS	NS	2,400	950	320	2,500	1,900	410	660	1,700	970	960	990
Manganese[4]	5,500	2,000	61	24	26	88	71	18	24	69	31	35	38
Nickel	4,600	140	13	4.3	10	13	12	8.6	4.0	13	16	24	29
Potassium	NS	NS	610	430	290	350	400	350	350	260	630	650	570
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	12	6.0	6.2	11	9.6	5.6	9.4	9.0	ND	ND	9.1
Zinc	70,000	2,200	110	79	620	340	180	1,900	480	150	1,900	2,100	6,400
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 330,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Restricted Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO: For constituents where the calculated SCO is less than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the 6 NYCRR Part 375-6.8(b) SCO for this use of the site.
[5]NYSDEC RUSCO: The SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted as yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RSI 3 Sample No.			P001-SC R43-3036-01	P001-SC R44-0006-01	P001-SC R44-1218-01	P001-SC R44-3036-01	P001-SC R45-0006-01	P001-SC R45-3036-01	P001-SC S41-0006-01	P001-SC S41-1218-01	P001-SC S41-3036-01	P001-SC S42-0006-01	P001-SC S42-1824-01
Sampling Date			12/3/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/1/2015	12/1/2015	12/1/2015	12/3/2015	12/3/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	12-18	30-36	0-6	30-36	0-6	12-18	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,900	3,300	3,500	5,800	6,800	8,100	6,400	3,800	12,000	6,100	10,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	0.79	ND	1.4	2.9 J	1.8	0.95	ND	0.89
Barium[4]	46,000	350	19	210	34	31	320	90	220	80	160	250	160
Beryllium	470	14	ND	ND	ND	0.36	ND	0.44	1.9	ND	0.67	1.7	0.60
Cadmium[4]	210	2.5	0.67	2.3	0.43	ND	7.5	ND	2.0	3.7	0.30	5.1	0.83
Calcium	NS	NS	320	3,800	280	240	3,100	440	2,400	1,300	920	2,300	700
Chromium	NS*	NS**	3.8	3.4	3.8	8.3	7.0	11	8.3	5.0	15	7.5	12
Cobalt	70	NS	ND	ND	ND	3.2	ND	2.8	ND	2.9	8.6	ND	4.3
Copper	9,400	270	3.6	19	2.4	7.9	13	5.4	77	5.8	8.5	25	3.7
Iron	160,000	NS	2,400	3,800	2,600	9,300	3,800	12,000	5,400	3,200	13,000	2,200	7,600
Lead	400	400	510	750	180	20	380	72	2,400	350	15	2,200	450
Magnesium	NS	NS	630	950	590	1,700	1,200	1,700	1,600	830	2,900	640	1,900
Manganese[4]	5,500	2,000	24	58	20	62	62	50	82	48	110	80	71
Nickel	4,600	140	3.6	17	3.4	9.9	14	7.7	17	6.7	20	11	11
Potassium	NS	NS	180	820	250	270	960	540	560	210	520	520	510
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	3.4	ND	3.9	9.0	9.0	15	13	5.1	15	7.2	12
Zinc	70,000	2,200	200	900	240	85	2,100	150	1,700	1,600	78	1,900	820
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RSI 3 Sample No.			P001-SC S42-3036-01	P001-SC S43-0006-01	P001-SC S43-1824-01	P001-SC S43-3036-01	P001-SC S44-0006-01	P001-SC S44-1824-01	P001-SC S44-3036-01	P001-SC S45-0006-01	P001-SC S45-0006-02	P001-SC S45-1218-01	P001-SC S45-3036-01
Sampling Date			12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/14/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	0-6	12-18	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,000	5,900	5,300	6,300	8,200	8,300	6,900	13,000	14,000	8,100	10,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	0.75	ND	7.4	7.8	5.4	6.5
Barium[4]	46,000	350	74	300	280	45	350	98	68	170	180	120	140
Beryllium	470	14	0.32	2.1	1.6	0.34	ND	0.63	0.45	5.9	6.0	3.0	2.6
Cadmium[4]	210	2.5	ND	23	6.2	ND	27	ND	ND	3.2	3.2	1.8	0.55
Calcium	NS	NS	310	3,800	5,500	340	4,800	520	380	550	500	370	680
Chromium	NS*	NS**	7.8	8.4	4.6	8.7	7.5	10	8.5	12	13	9.2	13
Cobalt	70	NS	3.8	ND	ND	3.7	ND	2.9	3.2	17	20	14	6.5
Copper	9,400	270	4.6	56	34	7.4	49	4.6	5.2	100	110	26	22
Iron	160,000	NS	7,500	2,600	3,300	8,000	3,900	6,100	6,800	17,000	18,000	14,000	15,000
Lead	400	400	46	2,400	3,500	20	2,800	570	220	1,600	1,700	590	210
Magnesium	NS	NS	1,700	840	1,100	1,900	1,300	1,700	1,700	3,500	1,600	1,900	2,000
Manganese[4]	5,500	2,000	67	50	52	71	44	62	64	1,700	2,000	790	260
Nickel	4,600	140	10	23	17	11	24	9.7	10	15	16	12	13
Potassium	NS	NS	310	850	460	330	1,100	520	380	840	870	580	850
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	7.9	ND	ND	8.5	ND	11	9.0	19	20	12	17
Zinc	70,000	2,200	260	3,600	3,400	110	5,400	460	360	1100	1,100	820	520
Mercury[5]	28	0.81	NA	NA	NA	NA	0.41	0.043	NA	0.20	0.21	0.059	0.059

Notes:
RSI 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect NA - Not analyzed NS - Not specified No - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
[3]No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 0.30 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 30 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO: For contaminants where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[5]NYSDEC RUSCO: The SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SCT41-0006-01	P001-SCT41-1218-01	P001-SCT41-3036-01	P001-SCT42-0006-01	P001-SCT42-3036-01	P001-SCT43-0006-01	P001-SCT43-0612-01	P001-SCT43-3036-01	P001-SCT44-0006-01	P001-SCT44-1824-01	P001-SCT44-1824-02
Sampling Date			12/1/2015	12/1/2015	12/1/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/14/2015	12/14/2015	12/14/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	12-18	30-36	0-6	30-36	0-6	6-12	30-36	0-6	18-24	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,100	11,000	9,600	6,400	7,100	2,700	4,700	7,600	14,000	9,500	12,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	1.3 J	1.3	ND	0.76	ND	ND	ND	4.6	1.7	1.8
Barium[4]	46,000	350	260	130	120	210	92	260	120	61	350	160	190
Beryllium	470	14	1.8	0.75	0.56	ND	0.41	ND	0.85	0.34	6.1	3.3	3.7
Cadmium[4]	210	2.5	3.6	ND	ND	1.8	ND	ND	48	ND	7.2	0.62	0.36
Calcium	NS	NS	3,000	1,100	960	1,600	500	4,500	1,100	350	1,200	600	690
Chromium	NS*	NS**	8.3	13	11	5.6	8.6	3.3	3.2	8.9	14	14	17
Cobalt	70	NS	ND	4.1	4.0	ND	3.4	ND	ND	3.9	ND	2.4	3.0
Copper	9,400	270	34	6.9	4.5	51	5.1	18	27	4.1	70	11	12
Iron	160,000	NS	4,900	8,100	7,000	8,900	6,400	5,100	2,100	8,100	15,000	7,400	8,000
Lead	400	400	2,300	190	200	2,100	130	1,100	1,200	220	1,500	620	640
Magnesium	NS	NS	650	1,700	1,500	610	1,600	1,100	520	2,000	2,000	1,200	1,600
Manganese[4]	5,500	2,000	62	74	63	29	61	23	22	73	84	69	82
Nickel	4,600	140	15	12	10	12	9.9	16	6.4	11	24	11	14
Potassium	NS	NS	480	510	440	1,000	360	980	580	410	1,700	910	1,100
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	11	12	9.2	12	8.9	ND	5.1	7.4	21	12	16
Zinc	70,000	2,200	1,600	200	120	870	380	1,000	2,300	470	2,600	680	780
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	0.35	0.096	0.072

RST 3 Sample No.			P001-SCT44-3036-01	P001-SCT45-0006-01	P001-SCT45-1824-01	P001-SCT45-3036-01	P001-SCU41-0006-01	P001-SCU41-1218-01	P001-SCU41-3036-01	P001-SCU42-0006-01	P001-SCU42-0612-01	P001-SCU42-1824-01	P001-SCU42-3036-01
Sampling Date			12/14/2015	12/14/2015	12/14/2015	12/14/2015	12/1/2015	12/1/2015	12/1/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	18-24	30-36	0-6	12-18	30-36	0-6	6-12	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	18,000	10,000	8,800	16,000	5,500	13,000	6,400	2,900	490	6,900	13,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.5	5.5	7.1	9.7	ND	1.4	0.81	4.9	1.9	9.1	2.1
Barium[4]	46,000	350	220	170	270	330	290	160	60	77	ND	110	190
Beryllium	470	14	4.4	6.6	6.0	7.5	2.0	0.63	0.29	0.54	ND	0.38	0.82
Cadmium[4]	210	2.5	0.50	4.1	6.0	4.1	3.3	0.65	ND	1.1	0.63	7.9	0.27
Calcium	NS	NS	940	780	450	760	3,300	1,300	460	530	51	240	450
Chromium	NS*	NS**	22	9.1	9.4	15	5.2	15	8.1	4.8	0.74	8.3	16
Cobalt	70	NS	3.6	21	14	14	ND	5.1	3.8	ND	ND	4.8	9.7
Copper	9,400	270	14	110	60	26	64	7.9	3.9	120	18	150	13
Iron	160,000	NS	12,000	13,000	14,000	22,000	6,600	8,900	3,200	650	6,500	17,000	
Lead	400	400	640	1,700	950	910	3,600	94	41	2,200	800	2,800	83
Magnesium	NS	NS	2,300	1,400	1,100	2,500	890	2,300	1,600	270	ND	910	3,300
Manganese[4]	5,500	2,000	87	1,700	1,400	2,600	55	90	61	12	1.3	35	140
Nickel	4,600	140	19	15	12	23	17	15	10	4.3	ND	6.6	21
Potassium	NS	NS	1,500	830	640	1,300	890	660	320	350	220	520	550
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	0.95	0.81	1.8	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	23	13	14	22	12	11	6.9	8.0	ND	7.1	18
Zinc	70,000	2,200	690	1,400	1,200	1,700	1,600	1,300	120	410	420	4,700	540
Mercury[5]	28	0.81	0.072	0.12	0.10	0.084	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 1×10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RML is for Residential Soil are 330,000 mg/kg for trivalent chromium and 80 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[4]NYSDEC RUSCO: thus SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SCV41-0006-01	P001-SCV41-1218-01	P001-SCV41-3036-01	P001-SCW41-0006-01	P001-SCW41-0006-02	P001-SCW41-1218-01	P001-SCW41-3036-01	P001-SCZ41-0006-01	P001-SCZ41-0612-01	P001-SCZ41-1824-01	P001-SCZ41-1824-02
Sampling Date			12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/1/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	12-18	30-36	0-6	0-6	12-18	30-36	0-6	6-12	18-24	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,400	14,000	12,000	360	390	1,700	15,000	2,900	16,000	9,100	11,000
Antimony	94	NS	ND	ND	ND	2.5	2.5	7.4	ND	3.6	ND	ND	ND
Arsenic[3]	68	16	24	2.1	0.96	19 K	17	43	4.8	67	2.9	2.6	5.2
Barium[4]	46,000	350	210	180	130	ND	ND	12	220	21	230	170	240
Beryllium	470	14	1.4	1.1	0.58	ND	ND	ND	1.2	0.65	0.86	0.52	0.74
Cadmium[4]	210	2.5	30	0.39	ND	3.6	9.9	69	0.43	2.3	3.2	ND	0.31
Calcium	NS	NS	1,300	1,000	740	ND	ND	210	350	170	530	280	330
Chromium	NS*	NS**	9.7	17	15	1.4	1.6	9.2	19	6.0	16	11	14
Cobalt	70	NS	16	5.0	7.1	ND	2.9	36	13	ND	6.8	5.9	7.6
Copper	9,400	270	850	13	5.9	46	210	1,300	12	700	4.4	4.1	7.7
Iron	160,000	NS	7,200	8,500	12,000	3,400	3,600	14,000	24,000	21,000	15,000	14,000	23,000
Lead	400	400	16,000	240	38	2,400	7,800	23,000	110	5,400	110	59	23
Magnesium	NS	NS	820	1,700	2,900	ND	ND	ND	3,100	320	2,400	2,200	2,400
Manganese[4]	5,500	2,000	27	69	110	0.91	1.2	100	160	22	98	97	130
Nickel	4,600	140	11	12	19	ND	ND	24	31	9.4	15	14	16
Potassium	NS	NS	1,400	800	540	270	320	1,000	580	760	590	360	400
Selenium	1,200	36	1.4	ND	ND	3.0	6.4	15	ND	5.4	ND	ND	ND
Silver	1,200	36	10	ND	ND	2.0	3.8	9.4	ND	4.8	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.1	21	15	2.2	2.7	ND	27	12	19	13	19
Zinc	70,000	2,200	13,000	790	140	2,600	7,400	48,000	990	710	1,300	940	1,200
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SCZ41-3036-01	P001-SCZ42-0006-01	P001-SCZ42-1824-01	P001-SCZ42-3036-01	P001-SCZ43-0006-01	P001-SCZ43-0612-01	P001-SCZ43-1824-01	P001-SCZ43-3036-01	P001-SCZ44-0006-01	P001-SCZ44-1824-01	P001-SCZ43-3036-01
Sampling Date			12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/11/2015	12/11/2015	12/11/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	18-24	30-36	0-6	6-12	18-24	30-36	0-6	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,400	4,600	3,600	8,700	12,000	5,600	6,700	7,200	9,100	11,000	12,000
Antimony	94	NS	ND	ND	3.3	ND	4.2	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	220	17	7.2	21	5.5	3.3	1.1	21	4.8	3.5
Barium[4]	46,000	350	42	43	64	440	43	220	110	86	160	120	130
Beryllium	470	14	ND	1.4	0.41	1.8	7.6	1.3	0.41	0.38	0.9	1.6	1.5
Cadmium[4]	210	2.5	ND	1.7	32	8.4	32	6.2	1.2	0.48	33	ND	ND
Calcium	NS	NS	99	480	210	1,800	210	1,600	610	370	2,200	290	410
Chromium	NS*	NS**	4.4	8.4	5.4	11	9.2	6.1	8.1	9.0	6.1	14	14
Cobalt	70	NS	2.4	ND	8.7	16	4.6	7.6	3.7	3.9	87	2.3	2.5
Copper	9,400	270	1.9	420	500	92	1,300	52	8.1	5.6	2900	7.9	8.0
Iron	160,000	NS	5,400	64,000	4,400	6,600	18,000	11,000	5,000	5,900	44,000	16,000	15,000
Lead	400	400	4.7	6,700	6,900	2,900	15,000	2,000	230	130	49,000	95	77
Magnesium	NS	NS	1,100	530	490	500	1,000	410	1,100	1,400	790	1,700	1,900
Manganese[4]	5,500	2,000	46	60	20	47	43	87	59	60	5,300	51	55
Nickel	4,600	140	6.5	5.4	5.6	17	14	18	7.4	8.9	22	11	11
Potassium	NS	NS	180	560	720	760	860	550	370	350	1,100	1,000	1,000
Selenium	1,200	36	ND	5.7	4.5	ND	3.5	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	3.1	4.3	ND	2.7	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	4.2	13	5.3	ND	14	ND	7.2	9.3	11	18	13
Zinc	70,000	2,200	240	880	20,000	34,000	2,700	13,000	2,100	1,100	4,600	460	400
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	1.5	0.031	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per Kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 180,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]
[5]NYSDEC RUSCO: the SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDA41-0006-01	P001-SDA41-3036-01	P001-SDA42-0006-01	P001-SDA42-1824-01	P001-SDA42-3036-01	P001-SDA43-0006-01	P001-SDA43-1218-01	P001-SDA43-3036-01	P001-SDA44-0006-01	P001-SDA44-3036-01	P001-SDA45-0006-01
Sampling Date			12/3/2015	12/3/2015	12/4/2015	12/4/2015	12/4/2015	12/15/2015	12/15/2015	12/15/2015	12/7/2015	12/7/2015	12/11/2015
Sample Depth (Inches)			0-6	30-36	0-6	18-24	30-36	0-6	12-18	30-36	0-6	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,600	8,100	4,800	8,700	8,300	6,000	2,100	3,400	15,000	11,000	6,100
Antimony	94	NS	5.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	210	1.1	5.2	0.93	0.96	14	4.8	0.83	5.0	0.99	7.7
Barium[a]	46,000	350	16	100	96	100	86	89	75	64	310	150	340
Beryllium	470	14	1.0	0.43	1.5	0.47	0.53	14	0.39	0.34	5.8	1.0	12
Cadmium[a]	210	2.5	0.89	0.35	8.4	ND	ND	11	9.3	0.62	9.0	0.29	44
Calcium	NS	NS	120	360	1,000	550	570	1,600	810	380	1,300	620	4,500
Chromium	NS*	NS**	5.3	11	8.8	10	11	5.1	2.8	4.2	15	14	7.0
Cobalt	70	NS	ND	6.2	ND	4.0	5.8	ND	8.0	3.2	8.8	2.1	670
Copper	9,400	270	330	5.9	720	3.5	7.7	2,800	140	3.8	62	7.8	2,800
Iron	160,000	NS	25,000	13,000	7,300	7,400	10,000	38,000	6,100	5,400	7,900	6,900	33,000
Lead	400	400	7,000	18	9,300	130	22	14,000	4,500	160	1,400	150	19,000
Magnesium	NS	NS	200	2,100	580	1,600	2,100	760	340	930	1,400	1,500	1,200
Manganese[a]	5,500	2,000	9.1	83	46	64	76	220	36	45	130	62	16,000
Nickel	4,600	140	ND	14	9.4	9.2	14	16	6.1	5.9	21	10	43
Potassium	NS	NS	520	330	1500	330	320	910	280	260	1,500	900	1,000
Selenium	1,200	36	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	14
Silver	1,200	36	2.4	ND	5.9	ND	ND	ND	1.3	ND	ND	ND	4.4
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	11	12	13	12	12	14	2.6	4.7	13	13	ND
Zinc	70,000	2,200	460	89	3,100	150	56	3,000	4,500	220	4,100	330	10,000
Mercury[b]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	0.57	NA	0.94

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDA45-1824-01	P001-SDA45-3036-01	P001-SDB41-0006-01	P001-SDB41-1824-01	P001-SDB41-3036-01	P001-SDB42-0006-01	P001-SDB42-0612-01	P001-SDB42-1824-01	P001-SDB42-3036-01	P001-SDB43-0006-01	P001-SDB43-0612-01
Sampling Date			12/11/2015	12/11/2015	12/3/2015	12/3/2015	12/3/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/3/2015	12/3/2015
Sample Depth (Inches)			18-24	30-36	0-6	18-24	30-36	0-6	6-12	18-24	30-36	0-6	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,600	9,100	12,000	8,700	7,900	2,800	14,000	10,000	5,500	10,000	9,900
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	5.1	6.8	6.8	3.1	ND	49	1.8	ND	ND	6.0	ND
Barium[a]	46,000	350	69	73	190	85	81	190	190	130	96	160	410
Beryllium	470	14	0.54	0.57	1.3	1.4	0.40	1.7	0.90	0.56	0.28	1.0	2.3
Cadmium[a]	210	2.5	ND	ND	6.5	0.53	ND	7.4	1.7	ND	ND	22	6.1
Calcium	NS	NS	350	440	1,000	520	630	3,300	980	800	390	1,100	2,300
Chromium	NS*	NS**	9.7	13	13	15	10	13	15	13	7.2	9.9	12
Cobalt	70	NS	3.1	3.2	ND	8.6	5.0	5.3	ND	6.4	3.7	7.9	11
Copper	9,400	270	6.4	13	73	13	7.4	550	44	6.2	4.8	1,800	34
Iron	160,000	NS	14,000	18,000	7,300	23,000	11,000	47,000	8,500	11,000	7,300	10,000	5,300
Lead	400	400	39	38	2,200	20	10	13,000	800	240	30	21,000	1,400
Magnesium	NS	NS	1,700	1,700	650	1,800	2,000	800	2,000	2,800	1,700	1,300	1,500
Manganese[a]	5,500	2,000	74	70	33	160	76	200	80	110	65	130	92
Nickel	4,600	140	8.6	8.5	8.0	15	14	14	14	17	10	24	31
Potassium	NS	NS	580	610	690	310	380	890	590	440	300	1,200	740
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	11	14	10	20	9.0	12	15	12	6.5	15	7.6
Zinc	70,000	2,200	180	160	1,900	130	87	5,000	1,600	300	65	8,500	6,000
Mercury[b]	28	0.81	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect. NA - Not analyzed. NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006).
All soil analytical results, EPA RMLs and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 330,000 mg/kg for trivalent chromium and 80 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium, NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[b]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDB43-1824-01	P001-SDB43-3036-01	P001-SDB44-0006-01	P001-SDB44-1824-01	P001-SDB44-3036-01	P001-SDB45-0006-01	P001-SDB45-0006-02	P001-SDB45-1218-01	P001-SDB45-1824-01	P001-SDC41-0006-01	P001-SDC41-0612-01
Sampling Date			12/3/2015	12/3/2015	12/8/2015	12/8/2015	12/8/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/4/2015	12/4/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	30-36	0-6	18-24	30-36	0-6	0-6	12-18	18-24	0-6	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,400	5,000	21,000	13,000	12,000	19,000	14,000	17,000	9,500	11,000	15,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.3	5.3	36	0.99	0.96	19	9.0	11	3.2	14	1.3
Barium[4]	46,000	350	250	120	62	160	140	80	91	250	93	200	300
Beryllium	470	14	1.5	0.42	23	1.3	0.79	14	10	5.6	1.0	1.2	0.73
Cadmium[4]	210	2.5	1.0	0.35	5.8	ND	ND	1.9	5.5	7.2	ND	4.1	ND
Calcium	NS	NS	1,400	730	660	790	750	1,300	1,700	1,100	460	1,300	1,100
Chromium	NS*	NS**	8.7	6.4	14	14	13	13	9.2	14	19	12	17
Cobalt	70	NS	4.4	3.8	6.3	4.2	3.3	7.2	5.8	13	2.9	ND	7.2
Copper	9,400	270	11	5.8	3,200	12	3.3	2,100	2,000	130	10	110	6.8
Iron	160,000	NS	5,400	7,200	32,000	8,600	7,800	23,000	18,000	11,000	10,000	11,000	15,000
Lead	400	400	920	98	47,000	360	320	31,000	29,000	2,300	66	3,400	22
Magnesium	NS	NS	1,400	1,300	1,700	2,300	1,900	1,800	1,400	1,800	1,300	650	3,100
Manganese[4]	5,500	2,000	82	72	90	95	69	150	140	120	61	37	120
Nickel	4,600	140	16	11	25	14	12	24	19	26	9.0	7.9	19
Potassium	NS	NS	430	340	1200	840	800	1,400	940	1,200	780	830	560
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	1.8	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	7.1	6.2	22	12	11	20	16	15	28	14	16
Zinc	70,000	2,200	750	350	3,800	450	360	1,700	1,600	4,900	210	1,500	170
Mercury[5]	28	0.81	NA	NA	3.6	0.091	NA	1.7	2.3	NA	NA	NA	NA

RST 3 Sample No.			P001-SDC41-3036-01	P001-SDC42-0006-01	P001-SDC42-1824-01	P001-SDC42-3036-01	P001-SDC43-0006-01	P001-SDC43-1824-01	P001-SDC43-3036-01	P001-SDC44-0006-01	P001-SDC44-1824-01	P001-SDC44-3036-01	P001-SDC45-0006-01
Sampling Date			12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/2/2015	12/2/2015	12/2/2015	12/8/2015	12/8/2015	12/8/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	6,200	5,100	6,700	9,100	6,600	9,500	16,000	11,000	8,700	9,400
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	0.82	4.7	ND	1.3	3.2	ND	0.76	13	ND	ND	6.1
Barium[4]	46,000	350	260	130	47	160	260	240	130	120	170	180	160
Beryllium	470	14	0.66	0.80	0.30	0.53	4.9	2.0	0.61	18	1.1	0.49	2.1
Cadmium[4]	210	2.5	ND	14	ND	1.8	18	8.0	ND	13	0.79	0.97	2.6
Calcium	NS	NS	880	650	180	720	1,200	1,100	610	1,200	1,100	700	3,900
Chromium	NS*	NS**	15	6.4	6.4	8.6	8.8	7.3	11	12	12	11	7.5
Cobalt	70	NS	6.3	3.3	3.0	3.9	6.2	4.5	4.5	13	3.6	4.5	ND
Copper	9,400	270	13	140	4.5	7.9	1,200	210	5.9	3,200	7.1	5.2	510
Iron	160,000	NS	13,000	5,800	6,000	7,800	4,200	2,000	7,200	26,000	7,100	9,000	15,000
Lead	400	400	17	2,600	38	330	14,000	3,900	380	35,000	350	280	4,800
Magnesium	NS	NS	3,200	510	1,400	1,800	810	480	1,900	1,400	2,100	2,500	1,000
Manganese[4]	5,500	2,000	120	46	52	77	44	37	72	370	84	93	98
Nickel	4,600	140	19	6.2	8.3	11	20	15	12	26	12	14	21
Potassium	NS	NS	600	570	210	780	940	560	510	1,300	610	430	1,000
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	15	7.9	5.7	7.9	12	6.2	12	18	8.8	8.8	12
Zinc	70,000	2,200	92	3,400	280	250	4,900	2,500	290	4,800	460	280	480
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	0.13	ND	0.67

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium, EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium, NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[5]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDC45-1824-01	P001-SDC45-3036-01	P001-SDD41-0612-01	P001-SDD41-1824-01	P001-SDD41-3036-01	P001-SDD42-0006-01	P001-SDD42-1824-01	P001-SDD42-3036-01	P001-SDD43-0006-01	P001-SDD43-1824-01	P001-SDD43-1824-02
Sampling Date			12/10/2015	12/10/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/4/2015	12/3/2015	12/3/2015	12/3/2015
Sample Depth (Inches)			18-24	30-36	6-12	18-24	30-36	0-6	18-24	30-36	0-6	18-24	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	26,000	18,000	14,000	7,600	5,100 J	1,500	3,400	3,300	8,600	12,000	14,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.0	1.6	3.1	1.0	ND	ND	3.1	2.1	ND	2.4	ND
Barium[4]	46,000	350	230	190	200	150	91	180	83	32	360	280	240
Beryllium	470	14	1.9	1.9	0.57	0.41	0.28	10	ND	ND	3.7	1.8	1.2
Cadmium[4]	210	2.5	ND	ND	0.50	ND	ND	37	2.3	0.49	15	0.75	0.44
Calcium	NS	NS	1,700	1,500	600	540	320	3,900	840	190	2,800	2,600	1,400
Chromium	NS[5]	NS**	19	19	17	9.2	6.6	ND	4.0	3.9	8.5	12	14
Cobalt	70	NS	2.5	2.2	8.3	4.4	3.3	140	4.6	5.3	9.8	ND	4.0
Copper	9,400	270	12	7.8	4.6	2.2	4.1	2,300	4.3	3.0	550	17	18
Iron	160,000	NS	5,500	4,700	21,000	9,500	6,800	13,000	4,000	5,200	4,400	12,000	6,100
Lead	400	400	150	82	42	13	4.9	19,000	380	69	7,200	2,800	1,000
Magnesium	NS	NS	1,600	1,400	3,200	1,700	1,300	1,200	910	1,100	820	1,100	1,800
Manganese[4]	5,500	2,000	37	34	140	67	59	4,300	42	45	140	59	73
Nickel	4,600	140	11	9.1	18	11	9.2	34	6.8	7.3	28	9.8	12
Potassium	NS	NS	1,300	1,100	430	280	230	2,200	200	200	720	830	880
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	18	18	19	11	6.3	ND	4.4	3.4	10	10	12
Zinc	70,000	2,200	180	120	330	100	28	8,600	540	260	5,900	630	850
Mercury[6]	28	0.81	0.16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDD43-3036-01	P001-SDD44-0006-01	P001-SDD44-1218-01	P001-SDD44-1824-01	P001-SDD45-0006-01	P001-SDD45-1824-01	P001-SDD45-1824-02	P001-SDD45-3036-01	P001-SDE41-0006-01	P001-SDE41-1824-01	P001-SDE41-3036-01
Sampling Date			12/3/2015	12/10/2015	12/10/2015	12/10/2015	12/11/2015	12/11/2015	12/11/2015	12/11/2015	12/7/2015	12/7/2015	12/7/2015
Sample Depth (Inches)			30-36	0-6	12-18	18-24	0-6	18-24	18-24	30-36	0-6	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	9,700	8,400	10,000	5,800 J	8,000	5,000	4,200	5,000	8,200	15,000	4,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.4	4.0	0.96	0.92	5.4	1.8 J	1.5	3.9	5.9	5.7	ND
Barium[4]	46,000	350	210	220	180	43	55	16	14	19	51	130	50
Beryllium	470	14	0.98	2.0	0.71	ND	0.60	ND	ND	0.28	ND	0.65	ND
Cadmium[4]	210	2.5	1.1	5.9	ND	ND	ND	ND	ND	ND	0.50	0.36	ND
Calcium	NS	NS	1,300	3,700	1,100	270	810	85	80	140	520	530	240
Chromium	NS[5]	NS**	13	6.8	9.7	6.9	7.5	6.3	5.3	6.0	9.1	18	4.7
Cobalt	70	NS	4.1	ND	ND	2.5	ND	1.9	ND	5.4	ND	7.6	2.5
Copper	9,400	270	18	130	21	5.2	15	2.4	2.0	9.8	15	6.3	2.5
Iron	160,000	NS	6,900	5,500	3,300	6,200	10,000	6,900	5,800	11,000	8,600	24,000	5,700
Lead	400	400	1,200	1,300	150	130	110	90	91	8.4	270	44	4.1
Magnesium	NS	NS	1,900	940	850	1,400	860	1,300	1,000	1,500	650	3,000	1,300
Manganese[4]	5,500	2,000	76	95	35	52	68	40	33	430	26	110	47
Nickel	4,600	140	14	17	5.7	7.8	8.0	6.1	4.8	9.2	4.9	18	7.6
Potassium	NS	NS	520	800	660	300	710	370	320	370	700	500	200
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.8	13	11	7.6	16	8.3	7.5	7.4	13	22	4.9
Zinc	70,000	2,200	550	1,100	320	200	65	27	25	36	300	120	27
Mercury[6]	28	0.81	NA	NA	NA	NA	0.13	NA	NA	NA	0.13	ND	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, Nat - Natural
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil correspond to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 330,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Removal Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[6]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDE42-0006-01	P001-SDE42-1824-01	P001-SDE42-3036-01	P001-SDE43-0006-01	P001-SDE43-0612-01	P001-SDE43-1824-01	P001-SDE43-3036-01	P001-SDE44-0006-01	P001-SDE44-1824-01	P001-SDE44-3036-01	P001-SDF41-0006-01
Sampling Date			12/7/2015	12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/3/2015	12/3/2015	12/10/2015	12/10/2015	12/10/2015	12/7/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	30-36	0-6	6-12	18-24	30-36	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	9,900	12,000	4,100	10,000	11,000	13,000	6,400	9,600	3,700	8,100	16,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.0	0.95	ND	4.2	ND	1.0	ND	ND	ND	1.3	6.2
Barium[4]	46,000	350	170	100	48	300	210	160	46	110	28	30	110
Beryllium	470	14	2.2	0.53	ND	3.5	1.4	0.98	0.36	ND	ND	0.32	0.91
Cadmium[4]	210	2.5	7.9	ND	ND	17	3.1	ND	ND	ND	ND	ND	1.0
Calcium	NS	NS	1,000	820	220	4,200	2,000	1,500	510	1,400	300	220	720
Chromium	NS*	NS**	11	14	5.4	7.8	9.0	13	8.0	6.3	3.7	10	17
Cobalt	70	NS	6.0	5.6	3.2	ND	ND	3.1	3.2	ND	ND	2.9	6.0
Copper	9,400	270	420	38	38	260	18	65	5.0	12	3.1	6.6	85
Iron	160,000	NS	8,300	11,000	5,800	4,500	2,600	5,500	6,100	2,400	2,400	12,000	16,000
Lead	400	400	4,500	330	26	4,000	820	810	240	360	55	23	1,800
Magnesium	NS	NS	1,500	2,500	1,400	930	910	1,800	1,700	680	570	2,500	2,100
Manganese[4]	5,500	2,000	110	98	52	71	44	72	60	13	17	66	97
Nickel	4,600	140	14	14	7.7	21	9.8	11	10	11	4.0	12	14
Potassium	NS	NS	660	500	220	1,000	790	840	380	850	280	640	980
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	11	14	4.2	11	8.4	8.8	6.3	7.2	2.9	9.9	26
Zinc	70,000	2,200	1,600	430	48	2,900	820	320	220	72	27	52	590
Mercury[5]	28	0.81	0.41	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.99

RST 3 Sample No.			P001-SDF41-1824-01	P001-SDF41-1824-02	P001-SDF41-3036-01	P001-SDF42-0006-01	P001-SDF42-1824-01	P001-SDF42-3036-01	P001-SDF43-0006-01	P001-SDF43-0612-01	P001-SDF43-1824-01	P001-SDF44-0006-01	P001-SDF44-1824-01
Sampling Date			12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/3/2015	12/11/2015	12/11/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	18-24	30-36	0-6	18-24	30-36	0-6	6-12	18-24	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	10,000	3,700	8,000	4,900	4,500	7,200	8,000	7,100	2,100	2,600
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	0.87	ND	ND	2.7	ND	ND	ND	2.4	ND	3.5	1.6
Barium[4]	46,000	350	140	130	38	170	52	85	260	270	64	69	90
Beryllium	470	14	0.58	0.53	ND	1.5	ND	ND	3.7	2.4	0.32	ND	ND
Cadmium[4]	210	2.5	ND	ND	ND	9.5	ND	ND	8.6	18	ND	ND	ND
Calcium	NS	NS	640	580	180	880	300	650	3,500	2,500	420	1,300	ND
Chromium	NS*	NS**	14	13	4.4	8.1	5.5	5.4	6.5	7.8	8.9	3.9	2.6
Cobalt	70	NS	7.3	6.9	2.5	ND	2.3	2.5	ND	ND	3.4	ND	ND
Copper	9,400	270	5.9	4.9	1.6	300	3.0	3.4	2,200	110	3.0	12	1.7
Iron	160,000	NS	12,000	11,000	5,400	2,700	4,600	5,000	3,800	2,500	6,000	3,000	4,700
Lead	400	400	20	12	4.6	4,500	94	140	18,000	2,400	270	140	5.4
Magnesium	NS	NS	2,700	2,400	1,200	600	1,200	1,200	850	720	1,500	590	410
Manganese[4]	5,500	2,000	110	96	45	29	43	51	65	48	54	52	16
Nickel	4,600	140	16	15	7.3	8.6	6.5	7.0	23	17	9.3	ND	2.3
Potassium	NS	NS	460	410	220	1,700	240	210	700	750	390	590	310
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	6.7	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	17	12	3.8	8.2	4.4	4.3	16	8.4	8.7	9.6	4.2
Zinc	70,000	2,200	110	100	36	1,300	150	96	3,300	4100	230	49	17
Mercury[5]	28	0.81	NA	NA	NA	9.5	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detected, NA - Not analyzed, NS - Not specified, Sur - Surrogate
[1] EPA RMLs = U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (published July 2015)
[2] NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
[3] No specified EPA RML for total chromium. EPA RMLs for Hexavalent Soil are 390 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
[4] No specified NYSDEC RUSCO for total chromium. NYSDEC Restricted Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4] NYSDEC RUSCO for constituents where the calculated SCO was lower than the total soil background concentration determined by the Department and Department of Health rural soil survey, the total soil background concentration is used as the track 2 SCO for this use of the site
[5] NYSDEC RUSCO for this SCO is the lower of the values for mercury elemental or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDG41-0006-01	P001-SDG41-1824-01	P001-SDG41-3036-01	P001-SDG42-0006-01	P001-SDG42-1824-01	P001-SDG42-1824-02	P001-SDG42-3036-01	P001-SDG43-0006-01	P001-SDG43-3036-01	P001-SDG44-0006-01	P001-SDG44-1824-01
Sampling Date			12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/11/2015	12/11/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	30-36	0-6	18-24	18-24	30-36	0-6	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,300	4,300	4,500	6,600	4,900	3,800	3,800	10,000	9,800	4,700	7,300
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.7	2.3	2.1	2.9	ND	ND	0.82	1.8	1.1	9.5	4.6
Barium[4]	46,000	350	120	74	67	79	36	28	27	110	84	97	27
Beryllium	470	14	ND	ND	ND	0.54	ND	ND	ND	1.2	0.52	ND	0.44
Cadmium[4]	210	2.5	1.1	0.94	ND	1.6	0.51	0.30	ND	ND	ND	ND	ND
Calcium	NS	NS	830	630	500	580	260	210	290	1,700	510	650	170
Chromium	NS*	NS**	8.3	5.4	5.6	6.7	5.6	4.5	4.7	8.5	12	7.4	10
Cobalt	70	NS	5.8	4.1	5.4	ND	3.0	2.5	3.1	ND	ND	ND	4.8
Copper	9,400	270	11	6.0	4.5	54	5.1	4.4	3.7	13	3.9	9.4	13
Iron	160,000	NS	6,600	4,900	5,600	2,900	5,500	4,700	5,200	1,900	4,400	6,900	16,000
Lead	400	400	400	250	79	1,400	65	70	25	420	59	210	34
Magnesium	NS	NS	1,500	1,100	1,200	620	1,400	1,100	1,200	750	1,300	450	2,300
Manganese[4]	5,500	2,000	63	46	52	22	48	41	46	10	32	28	170
Nickel	4,600	140	11	7.4	9.0	5.1	9.3	6.5	7.3	8.1	7.3	8.8	11
Potassium	NS	NS	320	230	260	520	240	200	230	810	690	640	450
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	0.87	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.0	5.4	5.5	7.8	5.3	4.2	4.4	10	11	20	12
Zinc	70,000	2,200	370	270	86	280	330	190	95	94	100	57	60
Mercury[5]	28	0.81	NA	NA	NA	0.28	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SDH41-0006-01	P001-SDH41-1824-01	P001-SDH41-3036-01	P001-SDH42-0006-01	P001-SDH42-1824-01	P001-SDH42-3036-01	P001-SDH43-0006-01	P001-SDH43-0612-01	P001-SDH43-1216-01	P001-SDH44-0006-01	P001-SDH41-0006-01
Sampling Date			12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/3/2015	12/11/2015	12/7/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	30-36	0-6	18-24	30-36	0-6	6-12	12-16	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	8,500	6,600	7,200	4,900	3,800	7,700	8,000	10,000	3,400	12,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.9	0.95	ND	ND	ND	0.89	ND	1.9	1.3	5.3	2.0
Barium[4]	46,000	350	91	57	49	100	46	28	130	93	82	140	85
Beryllium	470	14	0.67	0.32	0.29	0.54	ND	ND	0.93	0.80	0.44	1.1	0.59
Cadmium[4]	210	2.5	0.61	ND	ND	0.77	0.31	0.44	0.79	ND	ND	1.0	ND
Calcium	NS	NS	220	320	330	1,400	400	360	1,800	830	500	1,600	270
Chromium	NS*	NS**	11	9.1	8.3	8.1	5.5	4.4	5.9	7.1	13	5.2	10
Cobalt	70	NS	ND	3.8	4.2	ND	2.9	2.7	ND	ND	3.2	ND	ND
Copper	9,400	270	13	2.4	4.7	21	3.1	3.6	15	9.3	5.9	11	11
Iron	160,000	NS	3,900	8,100	8,200	5,300	4,800	4,700	1,200	2,100	7,600	8,100	4,200
Lead	400	400	510	100	7.1	720	160	100	660	560	83	170	260
Magnesium	NS	NS	600	1,700	1,900	1,300	1,200	1,200	660	520	1,800	590	810
Manganese[4]	5,500	2,000	17	61	68	33	46	44	10	10	54	21	24
Nickel	4,600	140	5.8	9.4	11	9.2	6.8	6.5	12	8.1	11	13	5.2
Potassium	NS	NS	650	310	320	470	250	240	750	580	620	550	570
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	13	10	8.5	7.8	5.4	4.4	5.5	5.9	12	9.6	12
Zinc	70,000	2,200	94	110	38	270	170	110	150	96	130	130	120
Mercury[5]	28	0.81	0.22	NA	NA	0.52	ND	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 550,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[4]NYSDEC RUSCO: For contaminants where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[5]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDJ41-1824-01	P001-SDJ41-3036-01	P001-SDJ43-0006-01	P001-SDJ43-3036-01	P001-SDJ44-0006-01	P001-SDJ44-1218-01	P001-SDJ44-1824-01	P001-SDK41-0006-01	P001-SDK41-1824-01	P001-SDK41-3036-01	P001-SDK42-0006-01
Sampling Date			12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/10/2015	12/10/2015	12/10/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015
Sample Depth (Inches)			18-24	30-36	0-6	30-36	0-6	12-18	18-24	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	10,000	15,000	9,300	8,400	7,000	6,300	6,300	8,000	8,900	7,500
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.8	1.4	ND	0.78	4.4	4.5	3.7	4.3	1.7	2.6	ND
Barium[3]	46,000	350	72	36	230	64	170	27	25	140	67	74	180
Beryllium	470	14	0.59	0.62	2.3	0.39	2.4	0.35	0.36	ND	0.39	0.40	1.4
Cadmium[3]	210	2.5	0.45	ND	ND	ND	0.70	ND	ND	1.5	ND	0.53	2.5
Calcium	NS	NS	450	480	1,900	420	900	87	86	3,900	290	650	2,500
Chromium	NS*	NS**	14	13	11	11	8.8	9.5	8.1	6.3	10	11	7.2
Cobalt	70	NS	5.2	5.6	ND	2.9	4.6	3.2	4.9	ND	6.5	9.8	ND
Copper	9,400	270	5.5	7.3	23	3.8	9.7	7.8	10	41	5.7	8.7	84
Iron	160,000	NS	26,000	17,000	2,500	7,000	9,500	15,000	13,000	6,300	9,300	25,000	2,700
Lead	400	400	33	13	1,000	110	160	8.6	8.9	520	18	12	1,500
Magnesium	NS	NS	1,700	1,800	1,000	1,800	900	1,800	2,100	510	1,700	2,100	870
Manganese[4]	5,500	2,000	67	70	19	56	250	90	280	32	69	300	17
Nickel	4,600	140	11	13	17	9.4	33	9.0	11	8.2	12	15	16
Potassium	NS	NS	390	340	1,300	490	590	430	350	930	320	310	840
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	17	17	13	9.5	15	11	9.1	15	9.6	12	9.2
Zinc	70,000	2,200	62	43	270	150	230	80	55	430	72	59	390
Mercury[5]	28	0.81	NA	NA	NA	NA	ND	NA	NA	0.29	NA	NA	ND

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDJ41-1824-01	P001-SDJ41-3036-01	P001-SDJ43-0006-01	P001-SDJ43-3036-01	P001-SDJ44-0006-01	P001-SDJ44-1218-01	P001-SDJ44-1824-01	P001-SDK41-0006-01	P001-SDK41-1824-01	P001-SDK41-3036-01	P001-SDK42-0006-01
Sampling Date			12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/10/2015	12/10/2015	12/10/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015
Sample Depth (Inches)			18-24	30-36	0-6	30-36	0-6	12-18	18-24	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	10,000	15,000	9,300	8,400	7,000	6,300	6,300	8,000	8,900	7,500
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.8	1.4	ND	0.78	4.4	4.5	3.7	4.3	1.7	2.6	ND
Barium[3]	46,000	350	72	36	230	64	170	27	25	140	67	74	180
Beryllium	470	14	0.59	0.62	2.3	0.39	2.4	0.35	0.36	ND	0.39	0.40	1.4
Cadmium[3]	210	2.5	0.45	ND	ND	ND	0.70	ND	ND	1.5	ND	0.53	2.5
Calcium	NS	NS	450	480	1,900	420	900	87	86	3,900	290	650	2,500
Chromium	NS*	NS**	14	13	11	11	8.8	9.5	8.1	6.3	10	11	7.2
Cobalt	70	NS	5.2	5.6	ND	2.9	4.6	3.2	4.9	ND	6.5	9.8	ND
Copper	9,400	270	5.5	7.3	23	3.8	9.7	7.8	10	41	5.7	8.7	84
Iron	160,000	NS	26,000	17,000	2,500	7,000	9,500	15,000	13,000	6,300	9,300	25,000	2,700
Lead	400	400	33	13	1,000	110	160	8.6	8.9	520	18	12	1,500
Magnesium	NS	NS	1,700	1,800	1,000	1,800	900	1,800	2,100	510	1,700	2,100	870
Manganese[4]	5,500	2,000	67	70	19	56	250	90	280	32	69	300	17
Nickel	4,600	140	11	13	17	9.4	33	9.0	11	8.2	12	15	16
Potassium	NS	NS	390	340	1,300	490	590	430	350	930	320	310	840
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	17	17	13	9.5	15	11	9.1	15	9.6	12	9.2
Zinc	70,000	2,200	62	43	270	150	230	80	55	430	72	59	390
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detected NA - Not analyzed NS - Not specified No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 39,000 mg/kg for hexavalent chromium and 30 mg/kg for trivalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for hexavalent chromium and 22 mg/kg for trivalent chromium
[4]NYSDEC RUSCO: For instances where the calculated SCO was lower than the naturally occurring soil background concentration as determined by the Department and Department of Health (and not survey, the natural soil background concentration is used as the Track 2 SCO for the site.
[5]NYSDEC RUSCO: The SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDK42-1824-01	P001-SDK42-3036-01	P001-SDK43-0006-01	P001-SDK43-1218-01	P001-SDK44-0006-01	P001-SDK44-1824-01	P001-SDK44-3036-01	P001-SDL41-0006-01	P001-SDL41-1824-01	P001-SDL41-3036-01	P001-SDL42-0006-01
Sampling Date			12/8/2015	12/8/2015	12/4/2015	12/4/2015	12/11/2015	12/11/2015	12/11/2015	12/8/2015	12/8/2015	12/8/2015	12/7/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	30-36	0-6	12-18	0-6	18-24	30-36	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	7,100	9,500	10,000	15,000	9,800	6,900	6,800	1,600	8,400	5,400	6,900
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	1.5	1.3	ND	1.7	5.4	2.8	2.9	ND	0.95	ND	2.0
Barium[a]	46,000	350	60	61	170	150	200	50	19	120	48	59	130
Beryllium	470	14	0.38	0.55	2.2	1.5	3.9	0.68	0.39	ND	0.42	0.38	1.0
Cadmium[a]	210	2.5	ND	ND	1.0	ND	1.5	ND	ND	1.5	ND	ND	1.2
Calcium	NS	NS	320	330	1,600	1,000	2,300	240	230	5,700	540	510	1,800
Chromium	NS*	NS**	8.9	12	8.8	15	9.4	11	15	ND	9.8	6.5	6.0
Cobalt	70	NS	4.2	5.9	ND	ND	4.3	2.7	2.5	ND	3.9	2.4	ND
Copper	9,400	270	4.3	8.0	38	8.1	68	5.8	7.0	17	4.7	4.8	51
Iron	160,000	NS	9,700	13,000	3,200	5,100	10,000	10,000	15,000	3,800	7,600	5,100	2,700
Lead	400	400	31	15	510	710	320	25	13	200	360	740	830
Magnesium	NS	NS	1,500	2,100	970	1,500	1,200	1,200	2,300	1,100	1,600	1,100	650
Manganese[a]	5,500	2,000	59	85	24	45	460	180	78	140	69	50	18
Nickel	4,600	140	9.2	14	18	10	26	7.4	9.3	ND	9.5	6.3	11
Potassium	NS	NS	280	390	810	820	630	400	370	1,100	280	220	690
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	10	15	10	12	12	7.8	11	ND	10	6.0	7.4
Zinc	70,000	2,200	85	76	240	230	350	110	55	500	79	97	180
Mercury[b]	28	0.81	NA	NA	NA	NA	0.31	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SDL42-1824-01	P001-SDL42-3036-01	P001-SDL43-0006-01	P001-SDL43-0612-01	P001-SDL43-1824-01	P001-SDL44-0006-01	P001-SDL44-3036-01	P001-SDM41-0006-01	P001-SDM41-1824-01	P001-SDM41-1824-02	P001-SDM41-3036-01
Sampling Date			12/7/2015	12/7/2015	12/3/2015	12/3/2015	12/3/2015	12/11/2015	12/11/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	30-36	0-6	6-12	18-24	0-6	30-36	0-6	18-24	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,400	6,700	11,000	16,000	7,600	6,300	4,800	9,000	6,000	16,000	5,200
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	0.92	1.2	2.7	1.7	0.95	3.1	2.3	3.6	2.5	2.8	2.7
Barium[a]	46,000	350	48	56	160	180	71	250	37	110	37	120	28
Beryllium	470	14	0.30	0.35	1.5	1.1	0.52	2.3	ND	ND	0.36	0.53	ND
Cadmium[a]	210	2.5	ND	ND	1.5	ND	ND	1.4	ND	1.1	ND	ND	ND
Calcium	NS	NS	320	360	2,300	1,900	750	2,700	170	1,300	300	650	250
Chromium	NS*	NS**	9.8	7.6	9.4	15	8.8	7.1	5.9	7.8	7.3	15	7.0
Cobalt	70	NS	4.3	3.0	ND	3.3	2.6	ND	ND	ND	3.8	6.2	4.2
Copper	9,400	270	2.5	4.1	84	5.7	3.5	150	27	27	4.0	2.6	4.7
Iron	160,000	NS	9,100	8,300	3,900	7,100	4,700	6,800	7,200	4,200	9,100	13,000	12,000
Lead	400	400	88	37	670	540	270	100	17	610	21	210	13
Magnesium	NS	NS	2,000	1,300	1,100	2,000	1,300	1,100	1,200	560	1,300	1,700	1,300
Manganese[a]	5,500	2,000	74	49	26	53	41	47	36	27	82	89	93
Nickel	4,600	140	11	8.2	15	11	8.1	37	6.3	8.3	7.9	11	8.2
Potassium	NS	NS	320	300	760	880	420	500	300	580	220	500	200
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.1	7.9	14	14	9.8	8.4	7.1	14	9.4	19	8.0
Zinc	70,000	2,200	120	92	180	230	180	170	30	350	41	180	41
Mercury[b]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	0.075	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006).
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 230,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for hexavalent chromium and 22 mg/kg for trivalent chromium.
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[b]NYSDEC RUSCO: the SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil.
Values in red equal or exceed the respective EPA RML for Residential Soil.
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil.

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDM42-0006-01	P001-SDM42-1218-01	P001-SDM42-3036-01	P001-SDM43-0006-01	P001-SDM43-1824-01	P001-SDM43-2430-01	P001-SDM44-0006-01	P001-SDM44-1824-01	P001-SDM44-3036-01	P001-SDN41-0006-01	P001-SDN41-1218-01
Sampling Date			12/8/2015	12/8/2015	12/8/2015	12/4/2015	12/4/2015	12/4/2015	12/10/2015	12/10/2015	12/10/2015	12/8/2015	12/8/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	12-18	30-36	0-6	18-24	24-30	0-6	18-24	30-36	0-6	12-18
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	10,000	13,000	6,100	11,000	10,000	13,000	9,000	10,000	10,000	5,700	15,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.1	1.7	4.0	2.3	1.2	0.97	6.3	1.4	1.3	1.9	1.6
Barium[4]	46,000	350	150	89	40	180	170	120	210	100	100	86	150
Beryllium	470	14	0.98	0.36	0.52	1.4	1.2	0.83	3.2	0.93	1.1	ND	0.88
Cadmium[4]	210	2.5	1.2	ND	ND	1.4	0.94	ND	1.3	ND	ND	0.73	ND
Calcium	NS	NS	1,000	420	310	1,400	2,100	1,600	1,700	690	1,200	2,000	1,200
Chromium	NS*	NS**	9.6	13	9.3	9.7	9.1	14	7.8	10	17	6.3	17
Cobalt	70	NS	ND	4.2	5.0	ND	ND	5.4	5.4	ND	ND	ND	7.2
Copper	9,400	270	24	25	6.1	140	15	9.7	160	9.8	7.5	25	13
Iron	160,000	NS	2,400	8,600	20,000	4,000	3,000	9,600	11,000	2,900	3,500	5,500	18,000
Lead	400	400	950	240	41	640	2,500	910	210	95	71	370	25
Magnesium	NS	NS	670	1,800	1,400	1,100	870	2,600	1,300	720	1,000	460	2,800
Manganese[4]	5,500	2,000	25	64	79	33	46	110	340	27	36	35	100
Nickel	4,600	140	7.5	9.6	9.7	16	6.8	15	31	6.0	8.1	7.8	18
Potassium	NS	NS	620	420	220	800	580	610	770	530	640	520	450
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	31	15	12	12	8.6	12	14	7.8	6.8	13	20
Zinc	70,000	2,200	220	220	73	210	230	350	260	58	45	190	84
Mercury[5]	28	0.81	0.23	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SDN41-3036-01	P001-SDN42-0006-01	P001-SDN42-1218-01	P001-SDN42-3036-01	P001-SDN43-0612-01	P001-SDN43-1824-01	P001-SDN44-0006-01	P001-SDN44-1218-01	P001-SDN44-1824-01	P001-SDN441-0006-01	P001-SDN441-1824-01
Sampling Date			12/8/2015	12/9/2015	12/9/2015	12/9/2015	12/4/2015	12/4/2015	12/10/2015	12/10/2015	12/10/2015	12/8/2015	12/8/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	12-18	30-36	6-12	18-24	0-6	12-18	18-24	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,300	8,100	14,000	15,000	6,500	5,100	11,000	12,000	11,000	1,400	12,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	0.74	3.3	2.0	1.4	1.3	0.83	ND	ND	1.0	2.1	1.7
Barium[4]	46,000	350	50	200	150	140	62	28	150	150	130	65	170
Beryllium	470	14	0.44	ND	0.78	0.65	0.31	ND	1.3	1.6	0.95	ND	0.57
Cadmium[4]	210	2.5	ND	2.9	ND	0.57	ND	ND	ND	ND	ND	1.4	ND
Calcium	NS	NS	450	2,600	810	730	170	240	3,500	2,000	1,800	3,400	1,800
Chromium	NS*	NS**	8.1	6.7	13	18	5.7	6.7	7.6	8.9	11	2.1	14
Cobalt	70	NS	4.3	ND	3.5	7.9	ND	3.7	ND	ND	ND	ND	7.7
Copper	9,400	270	5.2	65	4.3	6.5	5.6	4.6	54	33	6.8	17	2.2
Iron	160,000	NS	8,000	3,300	7,600	14,000	3,000	7,800	3,100	1,800	2,900	2,000	18,000
Lead	400	400	7.4	1,300	630	55	190	44	630	640	540	19	41
Magnesium	NS	NS	1,700	690	1,000	2,800	570	1,500	1,000	720	1,100	1,100	2,500
Manganese[4]	5,500	2,000	63	31	48	120	18	58	24	17	29	93	130
Nickel	4,600	140	11	12	7.5	18	3.8	8.6	16	11	6.3	ND	13
Potassium	NS	NS	220	720	560	520	320	210	930	690	630	1500	530
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.6	13	16	21	6.9	7.2	8.9	9.1	8.2	ND	18
Zinc	70,000	2,200	37	520	240	160	120	63	110	95	130	130	96
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	0.39	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detected NA - Not analyzed NS - Not specified No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil (corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for noncarcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
[3]No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 450,000 mg/kg for trivalent chromium and 36 mg/kg for hexavalent chromium
[4]No specified NYSDEC RUSCOs for total chromium. NYSDEC Commercial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[5]NYSDEC RUSCO's for mercury refer to where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[6]NYSDEC RUSCO's that SCO's or the lesser of the values for mercury (elemental or inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDO41-3036-01	P001-SDO42-0006-01	P001-SDO42-1824-01	P001-SDO42-3036-01	P001-SDO43-0006-01	P001-SDO43-1218-01	P001-SDO43-3036-01	P001-SDO44-0006-01	P001-SDO44-0612-01	P001-SDO44-1218-01	P001-SDO45-0006-01
Sampling Date			12/8/2015	12/9/2015	12/8/2015	12/8/2015	12/10/2015	12/10/2015	12/10/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	30-36	0-6	18-24	30-36	0-6	12-18	30-36	0-6	6-12	12-18	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,400	4,500	5,400	8,900	6,600	5,600	9,100	7,500	5,000	1,400	9,900
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	0.94	ND	ND	1.1	ND	ND	4.0	ND	1.2	ND	1.9
Barium[a]	46,000	350	94	170	31	58	210	77	230	190	87	ND	160
Beryllium	470	14	0.35	ND	0.39	0.56	1.6	0.35	1.8	1.4	0.69	ND	1.7
Cadmium[a]	210	2.5	ND	2.0	ND	ND	2.8	ND	12	1.5	0.61	ND	ND
Calcium	NS	NS	650	3,700	240	490	4,800	720	3,100	6,500	1,400	82	2,800
Chromium	NS*	NS**	8.6	4.1	7.4	12	4.6	6.1	7.8	6.2	5.0	1.6	16
Cobalt	70	NS	4.1	ND	3.7	5.2	ND	ND	ND	ND	ND	ND	ND
Copper	9,400	270	4.0	27	4.0	7.5	130	2.5	56	24	7.2	ND	17
Iron	160,000	NS	9,400	4,300	7,900	14,000	4,100	3,700	2,800	2,300	1,000	1,600	3,800
Lead	400	400	10	380	37	25	670	260	970	540	250	18	230
Magnesium	NS	NS	1,600	870	1,400	2,000	880	1,000	720	1,200	430	380	910
Manganese[a]	5,500	2,000	70	36	51	75	44	35	24	19	8.0	14	39
Nickel	4,600	140	10	11	8.4	12	20	5.9	12	17	4.0	1.9	18
Potassium	NS	NS	250	720	180	320	710	290	630	970	370	90	990
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	8.8	ND	8.7	13	14	5.2	9.9	ND	4.3	ND	5.8
Zinc	70,000	2,200	37	550	49	76	280	140	1,100	160	70	19	54
Mercury[b]	28	0.81	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15

RST 3 Sample No.			P001-SDO45-0612-01	P001-SDP41-0006-01	P001-SDP41-1824-01	P001-SDP41-3036-01	P001-SDP42-0006-01	P001-SDP42-0006-02	P001-SDP42-1824-01	P001-SDP42-3036-01	P001-SDP43-0006-01	P001-SDP43-1824-01	P001-SDP43-3036-01
Sampling Date			12/10/2015	12/9/2015	12/9/2015	12/9/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	6-12	0-6	18-24	30-36	0-6	0-6	18-24	30-36	0-6	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	10,000	5,300	4,300	4,900	6,300	5,900	9,800	9,800	5,900	13,000	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	1.2	2.9	ND	0.89	ND	ND	1.3	1.4	ND	ND	ND
Barium[a]	46,000	350	97	160	39	50	140	130	120	110	140	200	140
Beryllium	470	14	0.76	ND	ND	0.33	ND	ND	0.55	0.57	ND	1.4	0.96
Cadmium[a]	210	2.5	ND	4.3	0.45	ND	1.7	1.6	ND	ND	ND	ND	0.34
Calcium	NS	NS	870	3,400	690	590	1,600	1,600	960	990	3,500	2,500	1,600
Chromium	NS*	NS**	17	6.0	5.3	6.2	5.9	5.7	10	10	5.1	15	13
Cobalt	70	NS	2.3	ND	2.4	2.8	ND	ND	ND	2.6	ND	3.4	4.0
Copper	9,400	270	14	66	3.2	3.6	77	70	4.1	4.8	59	20	12
Iron	160,000	NS	6,000	3,800	4,800	4,900	3,700	3,600	4,200	6,000	4,300	6,800	8,200
Lead	400	400	30	800	190	540	580	510	390	340	590	920	620
Magnesium	NS	NS	1,500	680	1,100	1,100	600	600	1,100	1,400	880	2,000	2,400
Manganese[a]	5,500	2,000	42	100	36	51	20	21	41	52	42	70	84
Nickel	4,600	140	11	11	6.2	6.7	12	11	7.3	8.5	15	13	14
Potassium	NS	NS	550	780	190	200	770	710	570	560	770	620	550
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	12	12	5.5	6.8	11	9.7	7.9	8.2	ND	11	9.7
Zinc	70,000	2,200	50	590	100	88	270	250	220	130	180	380	420
Mercury[b]	28	0.81	0.092	NA	NA	0.067	NA	NA	NA	0.084	NA	0.18	0.11

Notes:
RST 3 - Removal Support Team 3
TAL – Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 230,000 mg/kg for trivalent chromium and 210 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Restricted Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[b]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001 SDP44 0006 01	P001 SDP44 1824 01	P001 SDP44 3036 01	P001 SDP45 0006 01	P001 SDP45 1824 01	P001 SDP45 3036 01	P001 SDQ41 0006 01	P001 SDQ41 3036 01	P001 SDQ42 0006 01	P001 SDQ42 0006 02	P001 SDQ42 1218 01
Sampling Date			12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015	12/10/2015	12/9/2015	12/9/2015	12/8/2015	12/8/2015	12/8/2015
Sample Depth (Inches)			0 6	18 24	30 36	0 6	18 24	30 36	0 6	30 36	0 6	0 6	12 18
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	8,700	11,000	5,400	1,900	11,000	7,300	3,800	4,900	6,900	7,200	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	1 6	0 82	1 5	6 9	1 1	ND	ND	ND	ND	2 1
Barium[4]	46,000	350	220	140	40	34	67	33	140	77	180	130	150
Beryllium	470	14	1 4	0 60	ND	ND	0 73	0 51	ND	ND	ND	ND	0 90
Cadmium[4]	210	2 5	ND	ND	ND	ND	ND	ND	3 0	2 9	2 2	1 5	0 54
Calcium	NS	NS	6,900	1,400	390	440	710	480	3,300	2,400	3,400	1,800	1,700
Chromium	NS*	NS**	8 1	9 2	6 4	2 7	16	10	7 8	6 5	6 3	7 2	10
Cobalt	70	NS	ND	ND	2 3	ND	3 2	3 3	ND	1 6	ND	ND	2 5
Copper	9,400	270	27	2 7	6 7	5 6	19	14	54	8 2	59	54	8 5
Iron	160,000	NS	9,900	5,700	5,800	1,800	18,000	8,900	3,700	5,500	4,800	4,400	8,900
Lead	400	400	470	230	150	58	30	8 9	800	400	630	590	360
Magnesium	NS	NS	1,300	710	1,300	400	2,100	2,300	760	1,200	870	620	1,200
Manganese[4]	5,500	2,000	25	13	51	11	47	56	46	120	40	24	45
Nickel	4,600	140	16	3 6	7 4	3 5	13	11	11	7 7	14	12	8 3
Potassium	NS	NS	880	540	290	590	510	410	840	240	810	670	520
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2 3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9 1	8 1	5 5	4 9	18	12	ND	5 9	10	12	12
Zinc	70,000	2,200	150	90	140	34	47	41	650	480	350	260	310
Mercury[5]	28	0 81	NA	NA	NA	0 065	NA	NA	NA	NA	NA	NA	0 11

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001 SDQ42 3036 01	P001 SDQ43 0006 01	P001 SDQ43 1824 01	P001 SDQ43 3036 01	P001 SDQ44 0006 01	P001 SDQ44 1824 01	P001 SDQ44 3036 01	P001 SDQ45 0006 01	P001 SDQ45 1824 01	P001 SDQ45 3036 01	P001 SDQ45 3036 02
Sampling Date			12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015
Sample Depth (Inches)			30 36	0 6	18 24	30 36	0 6	18 24	30 36	0 6	18 24	30 36	30 36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	10,000	8,100	16,000	14,000	7,500	15,000	11,000	2,300	6,000	9,800	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1 1	ND	1 8	ND	ND	1 5	1 1	ND	1 0	2 6	2 6
Barium[4]	46,000	350	130	180	200	210	150	200	150	76	17	44	43
Beryllium	470	14	0 64	ND	1 6	1 9	ND	1 8	1 0	ND	ND	0 78	0 57
Cadmium[4]	210	2 5	ND	1 3	2 3	3 6	ND	1 4	0 99	0 99	ND	ND	ND
Calcium	NS	NS	1,300	4,500	3,600	5,200	5,800	3,600	2,300	930	87	330	390
Chromium	NS*	NS**	11	7 1	16	15	8 1	17	13	2 6	7 5	15	15
Cobalt	70	NS	2 7	ND	ND	ND	ND	ND	ND	2 4	3 7	3 8
Copper	9,400	270	13	59	15	22	28	13	7 7	7 4	1 3	6 9	8 1
Iron	160,000	NS	5,700	4,400	6,800	4,500	2,600	3,300	4,300	1,800	7,800	16,000	17,000
Lead	400	400	350	670	300	1,300	510	640	340	53	6 9	10	13
Magnesium	NS	NS	1,300	950	2,200	1,600	1,100	1,300	1,300	1,000	1,600	2,300	2,600
Manganese[4]	5,500	2,000	49	25	68	54	44	33	35	24	49	60	62
Nickel	4,600	140	8 2	16	13	12	9 8	11	8 9	8 4	7 1	12	14
Potassium	NS	NS	490	790	820	700	880	820	630	1,200	300	550	540
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2 3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	10	12	12	9 6	9 5	9 5	7 8	6 1	9 1	15	15
Zinc	70,000	2,200	300	180	510	400	140	230	150	110	22	32	37
Mercury[5]	28	0 81	NA	NA	NA	0 20	NA	NA	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect NA - Not analyzed NS - Not specified No. - Number
[1]EPA RMLs - U S Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10-6 risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 13, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 180,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used or the Track 2 SCO for the use of the site
[5]NYSDEC RUSCO - The SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDR41-0006-01	P001-SDR41-1824-01	P001-SDR41-3036-01	P001-SDR42-0006-01	P001-SDR42-1824-01	P001-SDR42-3036-01	P001-SDR43-0006-01	P001-SDR43-1824-01	P001-SDR43-3036-01	P001-SDR44-0006-01	P001-SDR44-1824-01
Sampling Date			12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/9/2015	12/9/2015
Sample Depth (Inches)			0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,600	5,600	10,000	6,400	9,700	10,000	6,000	11,000	6,800	10,000	15,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	1.1	ND	1.4	ND	ND	ND	ND	ND	ND
Barium[4]	46,000	350	130	37	81	160	130	140	160	140	60	130	150
Beryllium	470	14	0.89	ND	0.69	ND	0.64	0.80	ND	1.5	0.60	1.3	1.9
Cadmium[4]	210	2.5	2.4	ND	ND	1.8	0.68	0.76	ND	2.8	1.9	1.6	1.4
Calcium	NS	NS	1,900	290	580	5,000	1,600	1,900	5,000	6,200	2,500	4,800	5,900
Chromium	NS*	NS**	6.9	7.5	14	5.8	8.3	8.2	4.9	12	8.2	12	29
Cobalt	70	NS	ND	3.2	5.7	ND	ND	ND	ND	ND	ND	ND	ND
Copper	9,400	270	41	4.0	11.0	39	6.0	6.6	54	27	16	32	21
Iron	160,000	NS	2,600	6,700	12,000	3,600	3,500	2,400	4,200	3,800	5,100	4,000	6,600
Lead	400	400	870	38	45	500	190	190	640	870	430	410	530
Magnesium	NS	NS	570	1,500	2,500	910	750	750	900	1,300	1,400	1,000	2,100
Manganese[4]	5,500	2,000	27	59	97	48	20	19	32	43	52	19	57
Nickel	4,600	140	9.3	8.9	15	12	5.6	6.1	14	13	9.9	12	20
Potassium	NS	NS	450	230	400	900	630	640	690	580	410	840	880
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	9.1	7.2	14	9.3	8.2	8.4	ND	8.3	9.3	11	9.9
Zinc	70,000	2,200	540	73	96	260	170	220	210	310	230	170	260
Mercury[5]	28	0.81	0.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDR44-3036-01	P001-SDR45-0006-01	P001-SDR45-1824-01	P001-SDR45-3036-01	P001-SDS40-0006-01	P001-SDS40-1218-01	P001-SDS40-3036-01	P001-SDS41-0006-01	P001-SDS41-1824-01	P001-SDS41-3036-01	P001-SDS42-0006-01
Sampling Date			12/9/2015	12/10/2015	12/10/2015	12/10/2015	12/8/2015	12/8/2015	12/8/2015	12/9/2015	12/9/2015	12/9/2015	12/8/2015
Sample Depth (Inches)			30-36	0-6	18-24	30-36	0-6	12-18	30-36	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	12,000	5,300	5,100	6,900	9,500	8,300	6,600	13,000	6,700	6,900	9,100
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	3.0	1.6	3.5	ND	ND	ND	ND	ND	ND	ND
Barium[4]	46,000	350	91	42	15	20	170	200	180	230	55	50	130
Beryllium	470	14	0.74	ND	ND	0.36	0.77	ND	0.55	1.4	0.38	0.34	ND
Cadmium[4]	210	2.5	ND	ND	ND	0.31	3.9	3.8	2.2	3.3	0.48	ND	ND
Calcium	NS	NS	1,600	390	160	340	3,000	6,100	2,600	2,700	440	450	3,500
Chromium	NS*	NS**	16	5.6	4.9	11	11	9.4	7.8	11	9.0	9.1	8.2
Cobalt	70	NS	6.2	ND	ND	4.0	ND	ND	4.2	ND	3.7	3.9	ND
Copper	9,400	270	10	9.4	2.7	19	17	25	11	34	8.1	6.7	38
Iron	160,000	NS	12,000	3,000	7,100	18,000	5,800	6,500	5,000	3,400	7,500	7,900	4,000
Lead	400	400	54	110	7.0	7.8	720	900	500	860	79	34	530
Magnesium	NS	NS	3,300	360	710	2,200	1,300	1,100	1,300	870	1,800	1,900	840
Manganese[4]	5,500	2,000	110	85	20	110	72	100	87	34	68	71	24
Nickel	4,600	140	20	5.9	3.7	11	12	13	9.0	13	11	11	11
Potassium	NS	NS	660	380	530	560	520	530	360	740	300	280	890
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	11	7.8	5.8	9.3	9.9	10	7.1	13	8.7	7.9	12
Zinc	70,000	2,200	150	34	14	31	630	710	330	650	110	85	180
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil correspond to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO for constituents where the calculated SCO was lower than the rural soil background concentrations as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[5]NYSDEC RUSCO - this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDS42-1218-01	P001-SDS42-3036-01	P001-SDS43-0006-01	P001-SDS43-1824-01	P001-SDS43-3036-01	P001-SDS44-0006-01	P001-SDS44-1824-01	P001-SDS44-3036-01	P001-SDS45-0006-01	P001-SDS45-1824-01	P001-SDS45-3036-01
Sampling Date			12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	12-18	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,000	6,400	9,700	10,000	6,100	11,000	11,000	10,000	1,700	5,600	8,700
Antimony	94	NS	ND	ND	ND	ND UJ	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND	ND	ND	ND	2.2	1.6	1.6
Barium[4]	46,000	350	72	71	140	110	47	140	100	58	49	23	28
Beryllium	470	14	ND	0.34	ND	0.68	0.31	ND	1.1	0.31	ND	ND	ND
Cadmium[4]	210	2.5	ND	ND	ND	ND	ND	ND	1.1	ND	ND	ND	ND
Calcium	NS	NS	780	750	3,000	2,000	650	4,200	2,000	520	560	180	280
Chromium	NS*	NS**	5.3	5.9	11	10	7.4	11	12	12	2.6	8.6	13
Cobalt	70	NS	ND	ND	ND	ND	ND	ND	ND	3.9	ND	2.0	2.8
Copper	9,400	270	2.8	3.6	33	5.9	3.8	28	11	7.2	3.9	1.4	3.3
Iron	160,000	NS	1,400	1,700	5,500	2,300	4,200	4,800	2,300	8,300	1,800	7,400	9,800
Lead	400	400	150	150	270	170	34	240	190	26	130	11	11
Magnesium	NS	NS	440	520	1,300	760	1,100	1,500	880	2,300	230	1,300	2,100
Manganese[4]	5,500	2,000	12	15	32	19	38	39	24	77	14	32	48
Nickel	4,600	140	2.8	3.3	12	4.9	6.6	15	7.5	13	5.2	6.5	11
Potassium	NS	NS	370	390	1300	580	280	1,100	930	390	220	350	430
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	3.9	4.3	9.9	8.5	7.0	13	8.5	8.8	9.3	7.9	11
Zinc	70,000	2,200	82	78	140	64	79	130	87	110	40	22	30
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SDT40-0006-01	P001-SDT40-1824-01	P001-SDT40-3036-01	P001-SDT41-0006-01	P001-SDT41-1824-01	P001-SDT41-3036-01	P001-SDT42-0006-01	P001-SDT42-0006-02	P001-SDT42-1824-01	P001-SDT42-3036-01	P001-SDT43-0006-01
Sampling Date			12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/8/2015	12/8/2015	12/8/2015	12/8/2015	12/9/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	18-24	30-36	0-6	18-24	30-36	0-6	0-6	18-24	30-36	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,700	11,000	8,000	10,000	6,100	11,000	15,000	13,000	18,000	16,000	8,400
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	6.1	1.5	ND	ND	0.80 J	ND	ND	1.4	1.1	4.2
Barium[4]	46,000	350	86	140	110	200	43	89	170	140	190	160	140
Beryllium	470	14	ND	0.71	0.47	ND	0.31	0.68	ND	ND	2.1	1.7	ND
Cadmium[4]	210	2.5	ND	0.69	ND	2.9	ND	ND	ND	ND	ND	ND	1.8
Calcium	NS	NS	6,300	2,300	720	2,800	400	920	4,000	3,000	2,900	2,200	4,000
Chromium	NS*	NS**	3.4	11	10	10	7.7	14	15	13	15	13	6.4
Cobalt	70	NS	ND	3.4	5.2	ND	4.2	7.8	ND	ND	ND	2.8	ND
Copper	9,400	270	18	17	3.3	78	7.9	12	33	27	18	12	29
Iron	160,000	NS	3,100	10,000	9,400	4,000	7,500	12,000	10,000	8,100	4,300	4,400	9,100
Lead	400	400	76	390	88	980	15	93	350	330	1,100	780	170
Magnesium	NS	NS	840	1,100	2,000	870	1,800	2,900	1,700	1,300	1,300	1,200	1,100
Manganese[4]	5,500	2,000	140	60	86	38	67	110	95	62	42	39	190
Nickel	4,600	140	0.9	11	12	14	11	18	15	13	11	9.0	16
Potassium	NS	NS	860	470	280	1,200	270	430	1,300	1,200	970	870	740
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	5.3	14	9.9	12	7.7	13	17	16	12	12	16
Zinc	70,000	2,200	150	200	160	510	59	210	170	130	240	210	200
Mercury[5]	28	0.81	NA	NA	NA	NA	NA	NA	0.16	0.26	0.25	NA	NA

Notes:
RST 3 - Remedial Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detected, NA - Not analyzed, NS - Not specified, Sec - Section
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 180,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCOs: For contaminants where the calculated SCO was lower than the rural soil background concentrations determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDT43-0612-01	P001-SDT43-1824-01	P001-SDT44-0006-01	P001-SDT44-1824-01	P001-SDT44-3036-01	P001-SDT45-0006-01	P001-SDT45-0006-02	P001-SDT45-0612-01	P001-SDU40-0006-01	P001-SDU40-1824-01	P001-SDU40-3036-01
Sampling Date			12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015	12/10/2015	12/9/2015	12/9/2015	12/9/2015
Sample Depth (Inches)	EPA RMLs for		6-12	18-24	0-6	18-24	30-36	0-6	0-6	6-12	0-6	18-24	30-36
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	26,000	7,500	14,000	28,000	10,000	6,800	6,400	4,200	5,100	7,300	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.7	ND	4.1	1.5	ND	4.9	4.8	0.92	1.6	1.2	3.0
Barium[4]	46,000	350	260	56	160	250	59	74	69	28	150	45	130
Beryllium	470	14	1.7	0.34	ND	1.8	0.69	0.60	ND	0.35	0.47	0.31	0.82
Cadmium[5]	210	2.5	ND	ND	ND	ND	2.0	ND	ND	ND	0.65	ND	0.33
Calcium	NS	NS	3,500	570	2,600	3,000	810	1,700	1,700	570	4,600	270	1,200
Chromium	NS*	NS**	19	8.5	13	23	13	9.9	8.6	17	5.1	8.6	13
Cobalt	70	NS	ND	3.3	ND	ND	4.7	ND	ND	4.6	4.4	2.1	6.2
Copper	9,400	270	17	6.9	39	16	13	12	14	4.3	11	2.1	6.0
Iron	160,000	NS	5,000	6,900	9,000	5,900	9,900	8,300	9,100	4,700	6,100	9,900	18,000
Lead	400	400	790	140	260	330	480	100	92	26	90	59	130
Magnesium	NS	NS	1,600	1,800	1,700	1,900	2,800	830	950	1,000	1,400	1,700	2,300
Manganese[6]	5,500	2,000	55	65	180	57	92	45	58	29	490	79	220
Nickel	4,600	140	11	11	17	13	16	9.1	9.7	6.1	9.5	9.9	14
Potassium	NS	NS	1,100	370	1,200	1,400	500	570	570	310	750	200	410
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	18	7.6	21	20	10	13	13	3.7	8.0	9.8	14
Zinc	70,000	2,200	210	130	160	160	380	54	67	18	200	140	250
Mercury[7]	28	0.81	NA	NA	NA	NA	0.064	NA	NA	NA	NA	NA	NA

RST 3 Sample No.			P001-SDU41-0006-01	P001-SDU41-1824-01	P001-SDU41-3036-01	P001-SDU42-0006-01	P001-SDU42-1218-01	P001-SDU42-3036-01	P001-SDU43-0006-01	P001-SDU43-1218-01	P001-SDU43-3036-01	P001-SDU44-0006-01	P001-SDU44-1824-01
Sampling Date			12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for		0-6	18-24	30-36	0-6	12-18	30-36	0-6	12-18	30-36	0-6	18-24
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,700	10,000	11,000	18,000	7,100	14,000	14,000	22,000	22,000	11,000	11,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	4.1	0.83 J	1.0	2.3	ND	1.9	5.1	6.0	1.3	3.9	2.6
Barium[4]	46,000	350	140	80	72	200	69	140	98	170	180	65	92
Beryllium	470	14	ND	1.2	0.63	2.1	1.3	1.7	0.99	1.2	2.5	0.71	0.90
Cadmium[5]	210	2.5	1.0	ND	0.30	1.5	0.54	ND	ND	ND	ND	ND	0.33
Calcium	NS	NS	5,200	960	1,100	2,600	1,000	1,600	1,800	1,700	2,800	490	840
Chromium	NS*	NS**	5.5	12	14	16	9.6	16	14	20	23	12	13
Cobalt	70	NS	ND	5.9	9.9	4.5	3.4	6.0	10	5.8	4.8	5.8	4.3
Copper	9,400	270	24	14	46	27	21	36	31	16	28	19	16
Iron	160,000	NS	6,600	11,000	17,000	8,800	6,200	11,000	16,000	15,000	9,200	12,000	12,000
Lead	400	400	130	420	33	1,200	510	720	210	600	950	130	380
Magnesium	NS	NS	940	2,600	4,500	1,900	1,700	3,500	2,900	1,700	2,700	2,300	1,300
Manganese[6]	5,500	2,000	170	95	150	200	63	100	440	320	90	170	130
Nickel	4,600	140	7.2	16	22	18	11	18	19	13	16	14	9.2
Potassium	NS	NS	790	500	580	950	360	820	1,000	1,100	1,300	610	710
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	15	11	16	17	14	16	22	19	19	18	13
Zinc	70,000	2,200	210	380	120	200	190	490	150	210	400	110	220
Mercury[7]	28	0.81	NA	ND	NA	NA	NA	NA	0.29	NA	0.28	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[7]NYSDEC RUSCO: thus SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil.
Values in red equal or exceed the respective EPA RML for Residential Soil.
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil.

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDU44-1824-02	P001-SDU44-3036-01	P001-SDU45-0006-01	P001-SDU45-0612-01	P001-SDU45-1218-01	P001-SDV40-0006-01	P001-SDV40-0006-02	P001-SDV40-1218-01	P001-SDV41-0006-01	P001-SDV41-0612-01	P001-SDV41-1824-01
Sampling Date			12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	18-24	30-36	0-6	6-12	12-18	0-6	0-6	12-18	0-6	6-12	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	8,500	6,900	7,500	13,000	9,300	9,200	8,400	9,100	15,000	5,800
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.3	1.4	4.1	5.9	2.5	6.9	4.2	3.8	5.4	5.0	3.0
Barium[4]	46,000	350	76	60	63	49	71	120	110	150	74	120	170
Beryllium	470	14	1.4	1.6	0.70	0.61	0.49	0.79	0.77	1.4	ND	0.94	0.53
Cadmium[5]	210	2.5	ND	ND	0.45	0.43	ND	1.3	1.3	1.3	ND	ND	0.30
Calcium	NS	NS	850	1,000	1,100	770	740	4,500	3,500	3,500	340	420	670
Chromium	NS*	NS**	13	11	7.8	8.8	17	9.8	10	9.6	7.8	10	6.8
Cobalt	70	NS	3.7	3.6	9.4	7.5	3.6	6.5	5.0	4.6	ND	3.9	2.7
Copper	9,400	270	23	23	15	18	31	23	24	30	12	11	19
Iron	160,000	NS	6,900	6,700	13,000	17,000	15,000	13,000	10,000	7,800	10,000	9,100	6,600
Lead	400	400	550	630	45	50	23	320	360	560	560	710	190
Magnesium	NS	NS	1,700	1,800	1,900	1,900	2,000	1,800	1,700	1,600	700	950	880
Manganese[4]	5,500	2,000	73	54	630	320	90	390	190	150	32	64	45
Nickel	4,600	140	11	13	13	12	12	15	14	14	6.8	7.7	5.9
Potassium	NS	NS	730	640	610	560	740	580	530	460	500	550	340
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	13	11	11	12	20	16	16	9.2	22	16	10
Zinc	70,000	2,200	270	300	62	55	37	300	270	450	120	210	100
Mercury[6]	28	0.81	NA	NA	NA	NA	NA	NA	NA	0.11	NA	0.23	NA

RST 3 Sample No.			P001-SDV42-0006-01	P001-SDV42-0612-01	P001-SDV42-1218-01	P001-SDV43-0006-01	P001-SDV43-1824-01	P001-SDV43-3036-01	P001-SDV44-0006-01	P001-SDV44-1824-01	P001-SDV44-3036-01	P001-SDV45-0006-01	P001-SDV45-1824-01
Sampling Date			12/10/2015	12/10/2015	12/10/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	6-12	12-18	0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	17,000	13,000	18,000	12,000	13,000	6,400	12,000	5,600	8,600	5,700	8,100
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	3.7	1.8	2.8	3.5	2.0	0.83	4.6	1.4	1.2	3.7	4.7
Barium[4]	46,000	350	150	77	150	78	71	43	66	38	71	32	37
Beryllium	470	14	1.4	1.9	1.6	0.78	2.0	1.5	0.75	0.30	0.44	0.49	0.32
Cadmium[5]	210	2.5	0.78	ND	0.37	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	NS	NS	3,000	1,000	2,000	870	860	620	330	290	610	290	240
Chromium	NS*	NS**	17	15	19	13	15	7.7	12	6.6	10	6.8	10
Cobalt	70	NS	7.9	6.8	4.1	7.1	7.2	3.0	12	3.2	4.6	5.1	4.6
Copper	9,400	270	32	23	16	23	26	25	21	6.5	9.4	13	16
Iron	160,000	NS	12,000	11,000	9,000	13,000	10,000	5,400	15,000	6,000	6,800	11,000	15,000
Lead	400	400	660	800	1,000	170	890	770	100	92	67	32	56
Magnesium	NS	NS	2,500	2,400	1,600	2,400	2,100	1,300	2,500	1,100	1,600	1,700	2,400
Manganese[4]	5,500	2,000	260	88	91	240	220	52	190	180	75	240	140
Nickel	4,600	140	18	16	12	14	14	9.0	15	6.5	9.8	10	12
Potassium	NS	NS	1300	840	1,100	730	840	370	680	370	480	370	410
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	22	20	19	17	18	8.0	18	8.5	9.2	8.7	13
Zinc	70,000	2,200	330	600	340	130	450	330	130	100	120	54	100
Mercury[6]	28	0.81	NA	0.074	0.20	NA	0.084	0.097	0.11	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium, EPA RMLs for Residential Soil are 150,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[4]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[6]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDW45-3036-01	P001-SDW40-0006-01	P001-SDW40-1218-01	P001-SDW40-1824-01	P001-SDW41-0006-01	P001-SDW41-1824-01	P001-SDW41-3036-01	P001-SDW42-0006-01	P001-SDW42-1218-01	P001-SDW42-1824-01	P001-SDW43-0006-01
Sampling Date			12/10/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/10/2015	12/10/2015	12/10/2015	12/9/2015
Sample Depth (Inches)			30-36	0-6	12-18	18-24	0-6	18-24	30-36	0-6	12-18	18-24	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,100	9,200	7,100	4,700	3,000	7,100	11,000	1,700	11,000	16,000	14,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	2.4	5.1	1.6	2.1	2.6	1.8	2.1	2.2	2.7	6.3	8.5
Barium[a]	46,000	350	21	140	62	42	38	15	30	51	20	30	120
Beryllium	470	14	ND	0.83	0.51	ND	ND	ND	ND	0.28	ND	ND	0.44	1.2
Cadmium[a]	210	2.5	ND	1.7	ND	0.41	ND	ND	ND	0.64	ND	ND	1.4
Calcium	NS	NS	170	5,600	1,100	860	440	60	120	960	92	180	3,400
Chromium	NS*	NS**	6.6	11	9.5	6.4	3.5	5.3	9.6	2.9	8.0	13	15
Cobalt	70	NS	4.1	10	4.3	4.0	ND	ND	3.4	ND	2.2	4.3	15
Copper	9,400	270	3.4	25	13	8.1	6.4	2.8	5.7	11	3.5	6.9	37
Iron	160,000	NS	9,700	15,000	10,000	6,900	2,800	6,300	12,000	2,300	13,000	20,000	22,000
Lead	400	400	14	330	32	25	85	35	51	150	64	140	200
Magnesium	NS	NS	1,300	1,800	2,300	1,400	310	790	1,900	600	1,600	2,400	3,000
Manganese[a]	5,500	2,000	150	470	85	66	20	41	92	26	45	71	820
Nickel	4,600	140	6.7	17	12	9.4	ND	3.2	10	4.7	6.8	14	22
Potassium	NS	NS	210	520	490	260	310	170	310	580	280	390	880
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	7.0	15	12	6.8	9.3	11	15	6.5	17	24	22
Zinc	70,000	2,200	34	410	59	110	43	96	210	85	150	310	260
Mercury[b]	28	0.81	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.30

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDW43-1824-01	P001-SDW43-1824-02	P001-SDW43-3036-01	P001-SDW44-0006-01	P001-SDW44-1824-01	P001-SDW44-3036-01	P001-SDX40-0006-01	P001-SDX40-1824-01	P001-SDX40-3036-01	P001-SDX41-0006-01	P001-SDX41-1218-01
Sampling Date			12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015	12/9/2015
Sample Depth (Inches)			18-24	18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	12-18
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	11,000	8,900	13,000	11,000	10,000	19,000	14,000	15,000	8,600	10,000	14,000
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[a]	68	16	15	14	3.0	7.0	4.1	9.8	4.2	3.2	1.6	3.0	4.7
Barium[a]	46,000	350	63	50	120	83	48	120	160	120	59	140	130
Beryllium	470	14	1.0	1.1	0.72	ND	0.62	1.3	2.0	2.2	3.3	1.6	1.8
Cadmium[a]	210	2.5	0.43	0.34	0.39	ND	ND	0.50	1.9	0.63	ND	3.9	0.68
Calcium	NS	NS	730	610	1,000	2,100	340	880	5,600	1,700	1,000	5,100	2,100
Chromium	NS*	NS**	12	10	14	12	12	21	15	16	12	11	15
Cobalt	70	NS	5.0	4.7	4.0	ND	4.7	13	6.5	5.3	3.7	15	7.1
Copper	9,400	270	20	19	23	30	17	44	20	47	42	42	21
Iron	160,000	NS	25,000	21,000	11,000	21,000	13,000	31,000	13,000	11,000	6,500	11,000	13,000
Lead	400	400	390	470	230	96	110	480	1,300	2,100	760	1,000	
Magnesium	NS	NS	1,900	1,700	2,100	2,800	2,400	2,400	2,300	1,800	1,600	1,800	1,700
Manganese[a]	5,500	2,000	100	93	83	170	84	680	240	91	53	2,000	450
Nickel	4,600	140	11	9.1	13	15	12	15	20	14	14	24	13
Potassium	NS	NS	580	510	640	1,500	680	1,100	970	830	660	850	830
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	17	14	16	20	16	32	17	19	10	13	19
Zinc	70,000	2,200	280	280	250	91	78	170	640	520	550	650	450
Mercury[b]	28	0.81	0.085	NA	NA	ND	0.087	NA	0.25	0.17	0.068	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Not detect, NA - Not analyzed, NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[b]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDX41-3036-01	P001-SDX42-0006-01	P001-SDX42-3036-01	P001-SDX43-0006-01	P001-SDX43-1824-01	P001-SDX43-3036-01	P001-SDX44-0006-01	P001-SDX44-1824-01	P001-SDX44-3036-01	P001-SDY40-0006-01	P001-SDY40-1824-01
Sampling Date			12/9/2015	12/15/2015	12/15/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for		30-36	0-6	30-36	0-6	18-24	30-36	0-6	18-24	30-36	0-6	18-24
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,700	13,000	5,500	1,900	8,500	920	10,000	16,000	20,000	12,000	5,600
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	4.1	2.1	1.5	5.5	0.75	3.1	9.1	9.6	8.6	0.90
Barium[4]	46,000	350	16	160	62	37	53	8.6	58	89	120	160	50
Beryllium	470	14	0.27	2.2	0.58	ND	1.9	ND	0.77	1.0	2.1	5.0	0.59
Cadmium[4]	210	2.5	ND	2.2	1.8	ND	ND	ND	ND	ND	ND	2.6	0.64
Calcium	NS	NS	260	5,300	1,200	3,600	650	170	1,200	800	1,300	2,500	590
Chromium	NS*	NS**	2.9	35	7.7	2.1	13	2.1	11	17	24	13	7.4
Cobalt	70	NS	ND	6.1	5.8	ND	4.8	ND	5.3	7.4	12	29	4.0
Copper	9,400	270	7.1	42	14	9.3	24	3.9	28	19	18	79	13
Iron	160,000	NS	3,400	11,000	8,100	2,700	16,000	1,700	10,000	16,000	26,000	14,000	6,200
Lead	400	400	180	1,400	94	42	370	38	350	310	820	5,100	210
Magnesium	NS	NS	540	2,200	1,700	660	1,500	190	2,200	2,600	2,500	1,500	1,600
Manganese[4]	5,500	2,000	34	140	70	41	80	20	130	140	340	800	60
Nickel	4,600	140	3.5	20	13	ND	12	ND	12	15	16	21	11
Potassium	NS	NS	450	880	280	460	590	250	740	820	1,200	1,000	300
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	2.8	17	9.8	3.9	27	ND	15	26	36	26	8.6
Zinc	70,000	2,200	90	620	270	93	450	33	74	160	310	810	300
Mercury[5]	28	0.81	NA	NA	NA	NA	0.16	NA	NA	NA	0.14	0.34	NA

RST 3 Sample No.			P001-SDY40-3036-01	P001-SDY41-0006-01	P001-SDY41-0006-02	P001-SDY41-1824-01	P001-SDY41-3036-01	P001-SDY42-0006-01	P001-SDY42-1824-01	P001-SDY42-3036-01	P001-SDY43-0006-01	P001-SDY43-0612-01	P001-SDZ40-0006-01
Sampling Date			12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015
Sample Depth (Inches)	EPA RMLs for		30-36	0-6	0-6	18-24	30-36	0-6	18-24	30-36	0-6	6-12	0-6
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,300	15,000	14,000	15,000	6,900	13,000	9,100	9,000	6,500	10,000	4,500
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	2.4	5.9	6.7	6.2	5.5	7.0	8.3	2.8	4.3	4.5	4.6
Barium[4]	46,000	350	36	190	150	170	38	110	50	33	54	59	75
Beryllium	470	14	0.58	2.3	1.8	2.3	1.9	2.2	1.8	1.0	0.66	1.0	1.2
Cadmium[4]	210	2.5	0.74	1.3	1.9	0.89	ND	1.1	0.47	ND	0.45	0.48	2.5
Calcium	NS	NS	690	3,600	4,100	2,700	630	2,400	700	520	1,700	950	1,500
Chromium	NS*	NS**	5.8	16	15	16	10	14	12	12	8.2	12	7.2
Cobalt	70	NS	4.7	12	12	19	3.5	16	19	10	7.9	6.6	5.1
Copper	9,400	270	13	33	41	28	48	23	11	36	24	28	25
Iron	160,000	NS	6,100	15,000	17,000	14,000	11,000	20,000	24,000	17,000	13,000	13,000	7,300
Lead	400	400	220	1,200	750	1,300	1,900	1,600	950	330	73	300	950
Magnesium	NS	NS	1,200	2,100	2,700	1,800	1,700	2,500	2,400	3,300	1,800	2,400	760
Manganese[4]	5,500	2,000	52	670	770	870	65	520	520	220	190	150	94
Nickel	4,600	140	9.8	19	22	15	12	19	15	17	13	15	10
Potassium	NS	NS	430	1,200	1,200	1,200	660	780	520	480	610	690	570
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	5.8	21	20	21	12	21	15	12	10	16	14
Zinc	70,000	2,200	260	810	690	750	470	610	360	410	150	240	400
Mercury[5]	28	0.81	NA	0.30	0.27	NA	ND	0.21	ND	ND	NA	NA	0.21

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg).
J - Indicates the reported value is an estimate.
B - Indicates the reported value may be biased high.
ND - Not detect. NA - Not analyzed. NS - Not specified. Soil - Surface.
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil correspond to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006).
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 3.9E+04 mg/kg for trivalent chromium and 39 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[4]NYSDEC RUSCO: For contaminants where the calculated SCO is or lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the final 6 NYCRR Part 375-6.8(b) SCO for the use of the site.
[5]NYSDEC RUSCO: The SCO is the lowest of the values for mercury (elemental) or mercury (inorganic salts).
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 2B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
December 1 through 16, 2015

RST 3 Sample No.			P001-SDZ40-1824-01	P001-SDZ40-3036-01	P001-SDZ41-0006-01	P001-SDZ41-1824-01	P001-SDZ41-3036-01	P001-SDZ42-0006-01	P001-SDZ42-1824-01	P001-SDZ42-3036-01	RB-151202	RB-151203	RB-151207
Sampling Date			12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/2/2015	12/3/2015	12/7/2015
Sample Depth (Inches)	EPA RMLs for		18-24	30-36	0-6	18-24	30-36	0-6	18-24	30-36	NA	NA	NA
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	DI Water	DI Water	DI Water
TAL Metal													
Aluminum	230,000	NS	13,000	13,000	9,200	15,000	8,900	14,000	10,000	8,100	ND	ND	ND
Antimony	94	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic[3]	68	16	1.2	1.6	4.1	1.9	0.88	9.5	6.6	1.3	ND	ND	ND
Barium[4]	46,000	350	82	140	130	120	57	120	70	44	ND	ND	ND
Beryllium	470	14	7.2	7.6	2.8	4.1	1.9	2.6	4.0	1.7	ND	ND	ND
Cadmium[5]	210	2.5	0.86	2.6	3.1	0.92	ND	1.3	0.63	0.27	ND	ND	ND
Calcium	NS	NS	720	1,500	2,700	1,400	700	3,600	1,100	640	ND	ND	ND
Chromium	NS*	NS**	14	16	9.9	19	12	17	13	11	ND	ND	ND
Cobalt	70	NS	7.9	6.3	9.0	6.7	3.4	19	57	11	ND	ND	ND
Copper	9,400	270	110	160	54	88	40	50	64	30	ND	ND	ND
Iron	160,000	NS	6,300	6,000	9,700	8,700	6,000	22,000	21,000	11,000	ND	ND	ND
Lead	400	400	1,900	6,400	1,400	1,900	980	980	2,500	630	ND	ND	ND
Magnesium	NS	NS	1,800	1,200	1,500	2,600	1,700	3,200	2,000	2,200	ND	ND	ND
Manganese[4]	5,500	2,000	51	42	160	74	50	390	1,500	270	ND	ND	ND
Nickel	4,600	140	18	19	23	24	13	25	16	15	ND	ND	ND
Potassium	NS	NS	1,100	1,300	950	1,400	840	1,100	940	960	ND	ND	ND
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	11	13	14	25	11	22	18	9.9	ND	ND	ND
Zinc	70,000	2,200	970	930	870	1,200	590	540	740	640	ND	ND	ND
Mercury[5]	28	0.81	0.14	0.18	0.18	0.39	NA	NA	0.13	NA	NA	NA	NA

RST 3 Sample No.			RB-151208	RB-151209	RB-151210	RB-151214	RB-151215
Sampling Date			12/8/2015	12/9/2015	12/10/2015	12/14/2015	12/15/2015
Sample Depth (Inches)	EPA RMLs for		NA	NA	NA	NA	NA
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	DI Water	DI Water	DI Water	DI Water	DI Water
TAL Metal							
Aluminum	230,000	NS	ND	ND	ND	ND	ND
Antimony	94	NS	ND	ND	ND	ND	ND
Arsenic[3]	68	16	ND	ND	ND	ND	ND
Barium[4]	46,000	350	ND	ND	ND	ND	ND
Beryllium	470	14	ND	ND	ND	ND	ND
Cadmium[5]	210	2.5	ND	ND	ND	ND	ND
Calcium	NS	NS	ND	ND	ND	ND	ND
Chromium	NS*	NS**	ND	ND	ND	ND	ND
Cobalt	70	NS	ND	ND	ND	ND	ND
Copper	9,400	270	ND	ND	ND	ND	ND
Iron	160,000	NS	ND	ND	ND	ND	ND
Lead	400	400	ND	ND	9.4	ND	ND
Magnesium	NS	NS	ND	ND	ND	ND	ND
Manganese[4]	5,500	2,000	ND	ND	ND	ND	ND
Nickel	4,600	140	ND	ND	ND	ND	ND
Potassium	NS	NS	ND	ND	ND	ND	ND
Selenium	1,200	36	ND	ND	ND	ND	ND
Silver	1,200	36	ND	ND	ND	ND	ND
Sodium	NS	NS	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND
Vanadium	1,200	NS	ND	ND	ND	ND	ND
Zinc	70,000	2,200	ND	ND	ND	ND	ND
Mercury[5]	28	0.81	NA	NA	NA	NA	NA

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
ND - Non-detect, NA - Not analyzed, NS - Not specified, No - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 1 for non-carcinogens (published July 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 100,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For contaminants where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
[4]
[5]NYSDEC RUSCO: this SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts)
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 3A: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 9 through 12, 2015

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-TP001-TS001-01	P001-TP001-TS002-01	P001-TP001-TS003-01	P001-TP001-TS004-01	P001-TP001-TS005-01	P001-TP001-TS006-01	P001-TP001-TS007-01	P001-TP001-TS008-01	P001-TP001-TS009-01	P001-TP001-TS010-01	P001-TP002-TS001-01	P001-TP002-TS002-01	P001-TP002-TS003-01
Sampling Date			11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015
Sample Depth (Inches)			0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal															
Aluminum	230,000	NS	4,200	2,000	8,000	19,000	3,500	9,400	15,000	8,100	9,500	5,900	3,600	7,300	17,000
Antimony	94	NS	ND	42	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	810
Arsenic	68	16[3]	2.4	3.0	2.8	7.8	1.8	3.9	3.5	26	23	9.9	3.7	19	16
Barium	46,000	350[3]	49	110	43	64	68	18	26	11	22	30	26	31	28
Beryllium	470	14	ND	ND	ND	0.82	ND	ND	ND	0.45	ND	0.38	ND	ND	0.82	0.87
Cadmium	210	2.5[3]	0.40	ND	ND	0.54	ND	ND	ND	ND	ND	0.43	0.93	ND	ND	0.49
Calcium	NS	NS	960	840	400	790	580	58	41	ND	ND	ND	180	91	190
Chromium	NS*	NS**	5.7	4.2	3.2	8.5	3.8	6.5	10	7.3	8.5	9.1	5.7	7.5	15
Cobalt	30	NS	ND	6.0	ND	9.4	ND	ND	ND	ND	ND	ND	ND	2.4	8.2
Copper	9,400	270	17	14	14	38	10	8.0	7.0	110	380	120	80	190	190
Iron	72,000	NS	6,900	3,200	11,000	18,000	5,800	10,000	14,000	10,000	21,000	11,000	4,800	17,000	24,000
Lead	400	400	230	340	220	580	180	130	93	1,400	4,500	1,100	2,000	4,900	4,900
Magnesium	NS	NS	810	410	270	270	250	390	220	440	360	180	230	880	1,800
Manganese	5,900	2,000[3]	110	150	160	270	260	30	87	28	24	46	91	230	420
Nickel	4,600	140	8.5	14	8.5	12	9.7	7.9	9.1	2.6	2.9	2.8	5.0	8.8	8.7
Potassium	NS	NS	1,400	1,100	1,400	1,100	990	620	710	610	850	630	790	890	1,000
Selenium	1,200	36	ND	ND	ND	ND	ND	ND	ND	2.9	3.5	ND	ND	0.4	5.1
Silver	1,200	36	ND	ND	ND	0.61	ND	ND	ND	2.2	3.6	1.4	1.6	2.9	4.5
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	15	8.9	16	31	8.5	19	30	17	24	11	12	14	41
Zinc	70,000	2,200	69	98	120	81	74	80	80	110	150	200	150	250	340
Mercury	28	0.81[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.2	NA

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-TP002-TS004-01	P001-TP002-TS005-01	P001-TP002-TS006-01	P001-TP002-TS007-01	P001-TP002-TS007-02	P001-TP002-TS008-01	P001-TP003-TS001-01	P001-TP003-TS002-01	P001-TP003-TS003-01	P001-TP003-TS004-01	P001-TP003-TS005-01	P001-TP003-TS006-01
Sampling Date			11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/12/2015
Sample Depth (Inches)			0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal														
Aluminum	230,000	NS	11,000	1,600	5,200	1,500	1,600	3,300	1,100	860	1,200	1,400	1,300	11,000
Antimony	94	NS	1.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	68	16[3]	6.8	1.9	0.1	ND	2.2	1.8	ND	ND	2.6	ND	1.5	20
Barium	46,000	350[3]	21	55	42	71	39	43	81	20	29	51	34	25
Beryllium	470	14	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.0
Cadmium	210	2.5[3]	1.0	3.6	0.7	1.4	1.4	0.42	ND	0.82	1.3	1.2	1.1	0.50
Calcium	NS	NS	98	1,300	410	1,200	2,400	1,600	1,100	890	180	2,200	1,200	280
Chromium	NS*	NS**	14	2.6	4.7	2.6	3.1	3.1	2.4	1.5	3.6	2.0	2.5	12
Cobalt	30	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2
Copper	9,400	270	640	12	150	14	14	23	13	11	82	14	11	200
Iron	72,000	NS	34,000	1,700	3,900	1,200	1,900	2,800	1,600	920	2,700	1,300	1,400	23,000
Lead	400	400	12,000	220	710	110	580	840	140	33	410	220	280	4,200
Magnesium	NS	NS	400	240	150	460	460	280	240	230	280	210	1,400	
Manganese	5,900	2,000[3]	48	88	35	100	91	160	92	85	34	74	94	1,800
Nickel	4,600	140	8.4	7.3	4.0	7.8	8.3	5.1	6.1	6.9	8.9	7.1	7.8	10
Potassium	NS	NS	1,200	850	450	1,100	1,200	850	1,100	1,100	700	920	780	1,000
Selenium	1,200	36	24	ND	2.5	ND	ND	ND	ND	ND	ND	ND	ND	3.9
Silver	1,200	36	20	ND	ND	ND	ND	ND	2.1	ND	0.80	0.80	ND	5.6
Sodium	NS	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	2.3	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	1,200	NS	31	7.8	10	7.7	11	10	5.0	ND	12	9.1	8.9	31
Zinc	70,000	2,200	820	180	1,600	83	92	200	250	250	300	500	98	280
Mercury	28	0.81[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.5

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
ND - Not detect
NA - Not analyzed
NS - Not specified
No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published July 2015).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2010).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 450,000 mg/kg for trivalent chromium and 80 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[3]For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
[4]This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts).
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil.
Values in red equal or exceed the respective EPA RML for Residential Soil.
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil.

Table 3B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
March 21 and 22, 2016

RST 3 Sample No.			P001-TP001-TS004-0612-01	P001-TP001-TS008-0612-01	P001-TP001-TS009-0612-01	P001-TP001-TS009-0612-02	P001-TP001-TS010-0612-01	P001-TP001-TS011-0006-01	P001-TP001-TS012-0006-01	P001-TP001-TS013-0006-01	P001-TP001-TS014-0006-01	P001-TP001-TS015-0006-01	P001-TP001-TS016-0006-01
Sampling Date			3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	6-12	6-12	6-12	6-12	6-12	0-6	0-6	0-6	0-6	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,900	6,500	7,300	6,700	7,600	6,400	6,500	3,100	3,900	4,300	4,800
Antimony	94	NS	2.3 U	2.4 U	2.2 U	2.4 U	2.4 U	4.9	2.2 U	2.5 U	2.3 U	2.5 U	2.4 U
Arsenic[3]	68	16	1.5	8.7	17	14	8.6	18	2.8	3.6	5.8	14	5.2
Barium[4]	46,000	350	33	12 U	14	14	12 U	13	14	18	11 U	13 U	20
Beryllium	470	14	0.34 U	0.36 U	0.43 J	0.37 J	0.36 U	0.39 U	0.51	0.37 U	0.34 U	0.38 U	0.36 U
Cadmium[4]	210	2.5	0.34 U	0.36 U	0.33 U	0.36 U	0.36 U	0.39 U	0.33 U	0.37 U	0.34 U	0.38 U	0.36 U
Calcium	NS	NS	57 U	59 U	55 U	60 U	61 U	65 U	100	61 U	57 U	310	60 U
Chromium	NS*	NS**	4.5	6.6	7.6	7.5	6.1	6.4	6.2	2.6	2.5	4.7	3.7
Cobalt	70	NS	3.6	2.4 U	2.2 U	2.4 U	2.4 U	2.6 U	2.8	2.5 U	2.3 U	2.5 U	2.4 U
Copper	9,400	270	3.4	78	170	160	170	160	56	19	5.8	12	110
Iron	160,000	NS	8,800	16,000	20,000	20,000	13,000	23,000	15,000	3,500	13,000	15,000	13,000
Lead	400	400	36	1,400	2,100	2,100	1,800	3,600	820	330	120	230	910
Magnesium	NS	NS	290	580	700	740	430	290	640	71	66	240	87
Manganese[4]	5,500	2,000	160	43	43	55	90	48	200	7.7	16	21	14
Nickel	4,600	140	2.3	2.9	3.6	3.6	2.4 U	2.6 U	4.0	2.5 U	2.3 U	3.3	2.4 U
Potassium	NS	NS	550	520	680	660	620	650	730	380	420	530	590
Selenium	1,200	36	2.3 U	2.4 U	2.2 U	2.4 U	2.4 U	2.6 U	2.2 U	2.5 U	2.3 U	2.5 U	2.4 U
Silver	1,200	36	0.57 U	1	1.4	1.4	1.3	2.3	0.57	0.61 U	0.57 U	0.63 U	0.60 U
Sodium	NS	NS	110 U	120 U	110 U	120 U	120 U	130 U	110 U	120 U	110 U	130 U	120 U
Thallium	2.3	NS	2.3 U	2.4 U	2.2 U	2.4 U	2.4 U	2.6 U	2.2 U	2.5 U	2.3 U	2.5 U	2.4 U
Vanadium	1,200	NS	8.1	13	13	14	12	13	9.6	9.7	14	14	11
Zinc	70,000	2,200	21	77	130	130	200	200	250	26	28	59	100

RST 3 Sample No.			P001-TP001-TS017-0006-01	P001-TP001-TS018-0006-01	P001-TP001-TS019-0006-01	P001-TP001-TS020-0006-01	P001-TP001-TS021-0006-01	P001-TP001-TS022-0006-01	P001-TP001-TS022-0006-02	P001-TP001-TS023-0006-01	P001-TP001-TS024-0006-01	P001-TP001-TS024-0612-01	P001-TP001-TS025-0006-01
Sampling Date			3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	0-6	6-12	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,600	3,400	6,100	7,200	7,500	4,000	4,900	5,400	8,800	12,000	5,200
Antimony	94	NS	2.3 U	2 U	2.5 U	2 U	2 U	2.1 U	2.2 U	3 U	2.1 U	2.2 U	2.4 U
Arsenic[3]	68	16	10	12	15	5	7.8	13	14	14	5.3	4.4	5.4
Barium[4]	46,000	350	14	12	13 U	12	12	11 U	11 U	15 U	11	14	15
Beryllium	470	14	0.34 U	0.43	0.38 U	0.65	0.69	0.32 U	0.33 U	0.44 U	0.32 U	0.32	0.36 U
Cadmium[4]	210	2.5	0.34	0.31 U	0.38 U	2.7	0.31 U	0.32 U	0.33 U	0.44 U	0.32 U	0.32 U	0.36 U
Calcium	NS	NS	57 U	51 U	63 U	50 U	51 U	53 U	56 U	74 U	53 U	54 U	59 U
Chromium	NS*	NS**	5.4	4.3	7.3	8.0	8.3	4.5	4.5	7.5	7.5	11	3.8
Cobalt	70	NS	2.3 U	2 U	2.5 U	3.6	3.2	2.1 U	2.2 U	3 U	2.3	5.6	2.4 U
Copper	9,400	270	77	54	50	43	33	45	97	150	45	36	41
Iron	160,000	NS	16,000	21,000	18,000	21,000	19,000	15,000	32,000	13,000	15,000	17,000	7,900
Lead	400	400	1,800	990	550	510	500	620	830	1,900	550	270	360
Magnesium	NS	NS	390	260	980	1,100	1,300	310 K	860	170	610	1,200	170
Manganese[4]	5,500	2,000	28	30	55	100	89	32	140	17	48	86	37
Nickel	4,600	140	2.4	2 U	4.6	6	7.4	2.1 U	4.3	3 U	5.4	12	2.4 U
Potassium	NS	NS	740	790	540	630	640	610	510	440	420	480	540
Selenium	1,200	36	2.3 U	2 U	2.5 U	2 U	2 U	2.1 U	2.2 U	3 U	2.1 U	2.2 U	2.4 U
Silver	1,200	36	2.6	1.5	1.4	0.56	0.61	2	1.4	1.3	0.62	0.54 U	0.72
Sodium	NS	NS	110 U	100 U	130 U	100 U	100 U	110 U	110 U	150 U	110 U	110 U	120 U
Thallium	2.3	NS	2.3 U	2 U	2.5 U	2 U	2 U	2.1 U	2.2 U	3 U	2.1 U	2.2 U	2.4 U
Vanadium	1,200	NS	9.0	6.9	18	10	11	11 K	15	13	12	13	11
Zinc	70,000	2,200	240	180	81	1,600	230	77	120	130	180	230	56

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
U - The analyte was not detected at or above the Reporting Limit
NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published November 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 180,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 3B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
March 21 and 22, 2016

RSI 3 Sample No.			P001-TP001-TS025-0612-01	P001-TP001-TS026-0006-01	P001-TP001-TS026-0612-01	P001-TP001-TS027-0006-01	P001-TP001-TS027-0612-01	P001-TP001-TS028-0006-01	P001-TP001-TS028-0612-01	P001-TP001-TS029-0006-01	P001-TP001-TS030-0006-01	P001-TP001-TS031-0006-01	P001-TP001-TS032-0006-01
Sampling Date			3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/22/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	6-12	0-6	6-12	0-6	6-12	0-6	6-12	0-6	0-6	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,300	2,600	4,300	5,400	11,000	6,200	6,900	8,500	6,700	5,700	2,400
Antimony	94	NS	2.4 U	2.5 U	2.3 U	2.4 U	2.4 U	2.4 U	2.2 U	2.3 U	2.4 U	2.5 U	4.8 U
Arsenic[3]	68	16	3.7	2.4	2.7	4.1	2.6	4.7	1.6	3.2	5.9	3.8	4.8
Barium[3]	46,000	350	16	21	13	20	17	53	40	44	27	15	15
Beryllium	470	14	0.36 U	0.37 U	0.35 U	0.37 U	0.4	0.36 U	0.34 U	0.36	0.35 U	0.37 U	0.72 U
Cadmium[3]	210	2.5	0.36 U	0.37 U	0.35 U	0.37 U	0.36 U	0.36 U	0.34 U	0.35 U	0.35 U	0.37 U	0.95
Calcium	NS	NS	76	62 U	58 U	61 U	59 U	110	56 U	58 U	59 U	62 U	240
Chromium	NS*	NS**	15	3.1	3.7	4.7	9.6	5.6	5.2	7.6	7.8	5.2	4.1
Cobalt	70	NS	2.4 U	2.5 U	2.3 U	2.4 U	3.3	2.4 U	2.2 U	3.1	2.4 U	2.5 U	4.8 U
Copper	9,400	270	29	7.6	3.8	13	7.6	6	1.9	3.8	19	6.4	28
Iron	160,000	NS	8,700	3,800	6,900	9,600	16,000	10,000	9,800	13,000	14,000	9,000	4,400
Lead	400	400	240	57	28	310	61	120	20	44	380	91	450
Magnesium	NS	NS	210	91	150	250	610	350	330	500	330	200	160
Manganese[3]	5,500	2,000	75	17	18	44	130	230	170	430	52	22	30
Nickel	4,600	140	6.4	2.5 U	2.3 U	2.4 U	6	2.8	2.2 U	4.3	3.5	2.5 U	6.5
Potassium	NS	NS	360	330	390	570	730	840	790	1,400	1,200	470	440
Selenium	1,200	36	2.4 U	2.5 U	2.3 U	2.4 U	2.4 U	2.4 U	2.2 U	2.3 U	2.4 U	2.5 U	4.8 U
Silver	1,200	36	0.7	0.62 U	0.58 U	0.66	0.71	0.69	0.56 U	0.81	0.92	0.62 U	1.2 U
Sodium	NS	NS	120 U	120 U	120 U	120 U	120 U	120 U	110 U	120 U	120 U	120 U	240 U
Thallium	2.3	NS	2.4 U	2.5 U	2.3 U	2.4 U	2.4 U	2.4 U	2.2 U	2.3 U	2.4 U	2.5 U	4.8 U
Vanadium	1,200	NS	11	8.8	12	13	15	13	9.1	12	15	16	13
Zinc	70,000	2,200	70	17	12	22	59	25	13	32	40	16	120

RSI 3 Sample No.			P001-TP002-TS001-0609-01	P001-TP002-TS002-0609-01	P001-TP002-TS003-0612-01	P001-TP002-TS004-0612-01	P001-TP002-TS006-0609-01	P001-TP002-TS008-0612-01	P001-TP002-TS009-0006-01	P001-TP002-TS010-0006-01	P001-TP002-TS011-0006-01	P001-TP002-TS011-0006-02	P001-TP002-TS012-0006-01
Sampling Date			3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/21/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	6-9	6-9	6-12	6-12	6-9	6-12	0-6	0-6	0-6	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	9,900	7,100	11,000	5,100	1,900	5,300	9,700	2,600	11,000	9,900	5,800
Antimony	94	NS	2.7 U	4.3	2.3 U	3.5	1.1	2.3 U	2.4 U	8.5	2.4 U	2.5 U	5.9
Arsenic[3]	68	16	5.2	18	7.7	16	1.7	5.3	6.2	47	7.4	6.9	9.3
Barium[3]	46,000	350	13 U	11 U	16	13 U	21	12 U	12 U	12 U	13 h	14	48
Beryllium	470	14	0.4 U	0.34 U	0.38 U	0.39 U	0.45 U	0.35 U	0.36 U	0.35 U	0.37 U	0.38 U	0.50 U
Cadmium[3]	210	2.5	1.8	0.34 U	0.48	0.39 U	1.1	0.35 U	0.36 U	0.35 U	0.37 U	0.38 U	0.50 U
Calcium	NS	NS	88	84	160	65 U	190	59 U	60 U	59 U	61 U	64 U	210
Chromium	NS*	NS**	3.1	8.1	13	4.6	3.1	3	8.8	3.8	12	9.5	5.8
Cobalt	70	NS	2.7 U	2.6	2.7	2.6 U	3 U	2.3 U	2.4 U	2.3 U	3.1	2.5 U	3.3 U
Copper	9,400	270	210	220	87	250	59	11	66	370	28	26	120
Iron	160,000	NS	4,900	21,000	16,000	10,000	3,100	5,200	17,000	33,000	18,000	14,000	7,900
Lead	400	400	4,600	8,600	2,700	4,300	290	740	760	2,200	370	370	1,800
Magnesium	NS	NS	130	1,200	850	190	77	120	560	120	1,600	870	180
Manganese[3]	5,500	2,000	33	290	290	25	23	12	75	33	140	45	29
Nickel	4,600	140	2.7 U	4.7	4.7	2.6 U	16	2.3 U	2.9	2.3 U	6.5	4	7.5
Potassium	NS	NS	440	620	430	510	240	410	280	970	430 h	450	500
Selenium	1,200	36	2.7 U	8	2.5 U	5.7	3 U	2.3 U	2.4 U	13	2.4 U	2.5 U	3.4
Silver	1,200	36	2.8	6.1	1.5	5.9	0.76 U	0.59 U	0.9	6.3	1.5	1.5	1.7
Sodium	NS	NS	130 U	110 U	130 U	130 U	150 U	120 U	120 U	120 U	120 U	130 U	170 U
Thallium	2.3	NS	2.7 U	2.3 U	2.5 U	2.6 U	3 U	2.3 U	2.4 U	2.3 U	2.4 U	2.5 U	3.3 U
Vanadium	1,200	NS	11	14	22	11	14	8.2	28	8.2	25	22	20
Zinc	70,000	2,200	660	270	400	180	220	49	96	290	56	49	80

Notes:
RSI 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
h - Indicates the reported value may be biased high
U - The analyte was not detected at or above the Reporting Limit
NS - Not specified; No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published November 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 1500 mg/kg for trivalent chromium and 8 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Restricted Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 3B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
March 21 and 22, 2016

RST 3 Sample No.			P001-TP002-TS013-0006-01	P001-TP002-TS014-0006-01	P001-TP002-TS015-0006-01	P001-TP002-TS016-0006-01	P001-TP002-TS017-0006-01	P001-TP002-TS018-0006-01	P001-TP002-TS018-0609-01	P001-TP002-TS019-0006-01	P001-TP002-TS019-0006-02	P001-TP002-TS019-0609-01	P001-TP002-TS020-0006-01
Sampling Date			3/22/2016	3/22/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/21/2016	3/22/2016
Sample Depth (Inches)	[1]EPA RMLs for Residential Soil[4]	NYSDEC RUSCO[2]	0-6	0-6	0-6	0-6	0-6	0-6	6-9	0-6	0-6	6-9	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	17,000	3,600	2,400	2,100	1,400	2,100	2,000	11,000	13,000	14,000	2,600
Antimony	94	NS	2.2 U	3 U	2.5 U	3.3 U	2.5 U	3.2 U	2.6 U	2.3 U	2.3 U	2.2 U	9.4
Arsenic[3]	68	16	6.7	4.8	5.4	3.3	1.1 J	4.9	3.1	5.5	5.7	5.2	3.8
Barium[3]	46,000	350	16	50	20	51	19	29	15	11 U	12	13	28
Beryllium	470	14	0.46 J	0.44 U	0.38 U	0.49 U	0.37 U	0.48 U	0.39 U	0.72	0.72	0.85	0.42 U
Cadmium[3]	210	2.5	0.32 U	0.45	0.38 U	0.61	0.37 U	0.51	0.39 U	0.34 U	0.35 U	0.32 U	0.42 U
Calcium	NS	NS	54 U	340	72	540	450	460	160	72	69	72	85
Chromium	NS*	NS**	13	2.9	2.9	4	2.5	3.6	16	16	9	9.7	3.3
Cobalt	70	NS	3.6	3 U	2.5 U	3.3 U	2.5 U	3.2 U	2.6 U	3.7	3.6	7	2.8 U
Copper	9,400	270	93	29	12	30	5.6	23	8.4	77	93	60	15
Iron	160,000	NS	20,000	3,300	3,100	3,100	1,100	2,900	1,700	15,000	16,000	16,000	2,900
Lead	400	400	830	420	130	290	78	540	90	1,100	1,300	1,200	390
Magnesium	NS	NS	1,200	130	79	100	69	91	65 U	800	790	770	96
Manganese[3]	5,500	2,000	120	27	11	23	10	13	6.5	200	210	450	15
Nickel	4,600	140	8.2	4.7	2.5 U	7	2.5 U	5.1	7.8	8.3	4.8	6.2	2.8 U
Potassium	NS	NS	500	250	190	240	150	250	200	450 K	570	560	230
Selenium	1,200	36	2.2 U	3 U	2.5 U	3.3 U	2.5 U	3.2 U	2.6 U	2.3 U	2.3 U	2.2 U	2.8 U
Silver	1,200	36	1	1	0.63 U	0.81 U	0.62 U	0.8 U	0.65 U	0.78	0.94	0.93	0.7 U
Sodium	NS	NS	110 U	150 U	130 U	160 U	120 U	160 U	130 U	110 U	120 U	110 U	140 U
Thallium	2.3	NS	2.2 U	3 U	2.5 U	3.3 U	2.5 U	3.2 U	2.6 U	2.3 U	2.3 U	2.2 U	2.8 U
Vanadium	1,200	NS	25	10	12	11	3.7	15	7.6	15	17	17	11
Zinc	70,000	2,200	260	94	24	45	13	30	12	490	530	700	33

RST 3 Sample No.			P001-TP002-TS020-0609-01	P001-TP002-TS021-0006-01	P001-TP002-TS021-0612-01	P001-TP002-TS022-0006-01	P001-TP002-TS023-0006-01	P001-TP002-TS024-0006-01	P001-TP003-TS003-0610-01	P001-TP003-TS006-0612-01	P001-TP003-TS007-0006-01	P001-TP003-TS008-0006-01	P001-TP003-TS009-0006-01
Sampling Date			3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[4]	NYSDEC RUSCO[2]	6-9	0-6	6-12	0-6	0-6	0-6	6-10	6-12	0-6	0-6	0-6
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,200	5,200	14,000	3,800	3,600	17,000	5,900	13,000	5,700	14,000	17,000
Antimony	94	NS	2.4 U	3.2 U	2.8 U	2.3 U	4.1 U	2.6 U	2.1 U	2.7 U	3 J	2 U	2.6 U
Arsenic[3]	68	16	3	7.8	9.5	4.7	5.9	11	12	5.7	71	10	10
Barium[3]	46,000	350	17	34	20	13	32	25	11 U	15	30 U	11	15
Beryllium	470	14	0.36 U	0.48 U	0.42 U	0.35 U	0.61 U	0.69	0.32 U	3	0.3	0.79	2.4
Cadmium[3]	210	2.5	0.36 U	0.48 U	0.42 U	0.35 U	0.71	0.40 U	0.79	0.84	0.44	0.41	1.8
Calcium	NS	NS	61 U	180	100	85	160	66 U	53 U	68 U	77	130	110
Chromium	NS*	NS**	4.1	6.1	12	5.4	6.9	13	8.2	8.2	8	17	14
Cobalt	70	NS	2.4 U	3.2 U	2.8 U	2.3 U	4.1 U	2.6 U	2.1 U	29	5.3	14	20
Copper	9,400	270	29	18	41	19	33	41	89	350	410	240	980
Iron	160,000	NS	2,200	7,000	17,000	6,800	5,200	21,000	16,000	12,000	22,000	26,000	24,000
Lead	400	400	290	470	1,800	830	500	450	950	11,000	3,800	1,700	6,100
Magnesium	NS	NS	75	240	820	380	160	1,000	1,100	270	1,400	4,500	1,400
Manganese[3]	5,500	2,000	8.4	38	110	57	34	48	60	2,200	280	460	1,200
Nickel	4,600	140	2.4 U	4.9	4.7	2.6	8.6	6.1	4.9	2.9	5.8	21	12
Potassium	NS	NS	160	510	500	430	400	510	620	380	650	680	800
Selenium	1,200	36	2.4 U	3.2 U	2.8 U	2.3 U	4.1 U	2.6 U	2.1 U	2.7 U	13	2 U	2.6 U
Silver	1,200	36	0.61 U	0.84	1.2	1	1 U	0.92	0.95	0.9	8.3	2.4	5.4
Sodium	NS	NS	120 U	160 U	140 U	120 U	200 U	130 U	110 U	140 U	100 U	100 U	130 U
Thallium	2.3	NS	2.4 U	3.2 U	2.8 U	2.3 U	4.1 U	2.6 U	2.1 U	2.7 U	2 U	2 U	2.6 U
Vanadium	1,200	NS	8.4	24	27	18	25	37	16	14	14	20	24
Zinc	70,000	2,200	24	96	280	100	74	150	510	650	590	690	1,800

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
U - The analyte was not detected at or above the Reporting Limit
NS - Not specified; No - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 1×10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published November 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 80 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentrations as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 3B: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
March 21 and 22, 2016

RST 3 Sample No.			P001-TP003-TS010-0006-01	P001-TP003-TS011-0006-01	P001-TP003-TS011-0612-01	P001-TP003-TS012-0006-01	P001-TP003-TS012-0612-01	P001-TP003-TS013-0006-01	P001-TP003-TS013-0612-01	P001-TP003-TS014-0006-01	P001-TP003-TS014-0612-01	P001-TP003-TS015-0006-01	P001-TP003-TS015-0612-01
Sampling Date			3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/21/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	0-6	6-12	0-6	6-12	0-6	6-12	0-6	6-12	0-6	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,100	5,100	16,000	5,500	6,700	6,200	8,300	11,000	8,900	13,000	9,500
Antimony	94	NS	4.8 U	2.7 U	2.4 U	3.1 U	2.4 U	3.5 U	2.5 U	2.4 U	2.3 U	2.5 U	2.1 U
Arsenic[3]	68	16	3.9	6	5.2	6.4	4.2	16	9.0	12	6.3	16	8.2
Barium[3]	46,000	350	75	14 U	12 U	21	12 U	19	12 U	13	12	14	11 U
Beryllium	470	14	0.73 U	0.41 U	0.36 U	0.46 U	0.36 U	0.52 U	0.46	0.66	0.81	0.53	0.52
Cadmium[3]	210	2.5	0.73 U	0.41 U	0.36 U	0.46 U	0.36 U	0.52 U	0.37 U	0.37 U	0.34	0.38 U	0.32 U
Calcium	NS	NS	270	68 U	60 U	77 U	59 U	95	61 U	61 U	57 U	63 U	53 U
Chromium	NS*	NS**	4.4	5	14	6.5	5.4	8.9	8.5	11	8.2	13	11
Cobalt	70	NS	4.8 U	2.7 U	2.4 U	3.1 U	2.4 U	4.4	11	3.9	3.1	3.4	2.7
Copper	9,400	270	37	31	20	19	11	200	110	280	450	220	180
Iron	160,000	NS	3,300	7,500	18,000	6,700	9,100	13,000	17,000	17,000	12,000	20,000	15,000
Lead	400	400	530	250	180	280	140	2,700	2,300	2,800	4,000	2,100	1,600
Magnesium	NS	NS	120 U	220	610	300	270	480	500	1,600	1,200	1,800	1,500
Manganese[3]	5,500	2,000	22	16	25	21	19	220	1,000	120	120	75	74
Nickel	4,600	140	6.2	2.7 U	3.3	3.1 U	2.4 U	4.4	2.5 U	7	4.9	7.9	6.4
Potassium	NS	NS	460	200	240	310	190	710	470	520	430	540	440
Selenium	1,200	36	4.8 U	2.7 U	2.4 U	3.1 U	2.4 U	3.5 U	2.5 U	2.4 U	2.3 U	2.5 U	2.1 U
Silver	1,200	36	1.2 U	0.68 U	0.82	0.88	0.59 U	1.8	1.7	1.8	1.2	2	1.3
Sodium	NS	NS	240 U	140 U	120 U	150 U	120 U	170 U	120 U	120 U	110 U	130 U	110 U
Thallium	2.3	NS	4.8 U	2.7 U	2.4 U	3.1 U	2.4 U	3.5 U	2.5 U	2.4 U	2.3 U	2.5 U	2.1 U
Vanadium	1,200	NS	12	25	31	20	19	31	27	22	15	31	19
Zinc	70,000	2,200	100	140	220	68	46	270	260	350	300	340	260

RST 3 Sample No.			P001-TP003-TS016-0006-01	P001-TP003-TS017-0006-01	P001-TP005-TS001-0006-01	P001-TP005-TS002-0006-01	P001-TP005-TS002-0612-01	P001-TP005-TS003-0006-01	RB-160321	RB-160322
Sampling Date			3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/22/2016	3/21/2016	3/22/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-6	0-6	0-6	0-6	6-12	0-6	NA	NA
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	DI Water	DI Water
TAL Metal										
Aluminum	230,000	NS	12,000	12,000	10,000	11,000	12,000	14,000	100 U	100 U
Antimony	94	NS	3.5 U	4.9 U	2.3 U	2.9 U	2.5 U	2.8 U	20 U	20 U
Arsenic[3]	68	16	13	19	6.8	10	4.5	8.3	8 U	8 U
Barium[3]	46,000	350	18 U	28	11 U	17 K	15	17	100 U	100 U
Beryllium	470	14	0.53 J	0.74 U	0.46	1.5	1.4	1.4	3 U	3 U
Cadmium[3]	210	2.5	0.53 U	0.74 U	0.34 U	0.61	0.38 U	0.56	3 U	3 U
Calcium	NS	NS	89 U	120 U	160	170	140	210	500 U	500 U
Chromium	NS*	NS**	12	12	12	9	13	13	5 U	5 U
Cobalt	70	NS	3.5 U	4.9 U	5.4	5.5	12	28	20 U	20 U
Copper	9,400	270	360	240	110	410	250	170	10 U	10 U
Iron	160,000	NS	16,000	15,000	18,000	13,000	16,000	22,000	50 U	50 U
Lead	400	400	5,000	3,100	710	22,000 J	14,000	14,000	8 U	8 U
Magnesium	NS	NS	1,400	1,900	2,900	950	1,400	2,500	500 U	500 U
Manganese[3]	5,500	2,000	61	54	150	760	2,100	2,400	5 U	5 U
Nickel	4,600	140	8.0	7.7	13	6.2	8.6	12	20 U	20 U
Potassium	NS	NS	680	890	530	380 K	590	550	500 U	500 U
Selenium	1,200	36	3.5 U	4.9 U	2.3 U	2.9 U	2.5 U	2.8 U	20 U	20 U
Silver	1,200	36	2.3	5.3	1.6	3.1	2.2	1.9	5 U	5 U
Sodium	NS	NS	180 U	250 U	110 U	150 U	130 U	140 U	1,000 U	1,000 U
Thallium	2.3	NS	3.5 U	4.9 U	2.3 U	2.9 U	2.5 U	2.8 U	20 U	20 U
Vanadium	1,200	NS	37	36	19	20	19	27	20 U	20 U
Zinc	70,000	2,200	230	250	200	350	470	680	20 U	20 U

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
All soil analytical results reported in milligrams per kilogram (mg/kg)
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
U - The analyte was not detected at or above the Reporting Limit
NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published November 2015)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium, EPA RMLs for Residential Soil are 180,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium, NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For contaminants where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 4: Validated Surface Water Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 10 through 12 and December 10 and 11, 2015

RST 3 Sample No.	P001-SW001-01	P001-SWF001-03	P001-SWU001-03	P001-SW001-02	P001-SW002-01	P001-SW003-01	P001-SW004-01	P001-SW005-01	P001-SWF005-03	P001-SWU005-03	P001-SWF005-04	P001-SWU005-04
Sampling Date	11/10/2015	12/10/2015	12/10/2015	11/10/2015	11/10/2015	11/10/2015	11/11/2015	11/11/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015
Sample Matrix	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
TAL Metal												
Aluminum	**100**	**110**	**110**	**120**	**460**	**160**	**110**	**760**	ND	ND	ND	**100**
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	**4.8**	**3.5**	**3.4**	**4.5**	**5.2**	ND	**4.5**	**4.3**	ND	**3.2**	ND	**3.0**
Calcium	**1,900**	**1,800**	**1,700**	**2,000**	**2,200**	**2,600**	**2,000**	**1,800**	**1,700**	**1,700**	**1,700**	**1,700**
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	**55**	**61**	**61**	**57**	**200**	**35**	**26**	**100**	**30**	**42**	**29**	**40**
Iron	ND	ND	ND	ND	**16,000**	**1,200**	**210**	**1,700**	**93**	**180**	**91**	**190**
Lead	**580**	**570**	**560**	**600**	**2900**	**56**	**340**	**2,100**	**330**	**520**	**320**	**510**
Magnesium	**1,200**	**1,100**	**1,100**	**1,300**	**1,300**	**850**	**1,200**	**940**	**900**	**1,000**	**900**	**1,000**
Manganese	**25**	**24**	**23**	**27**	**88**	**88**	**24**	**49**	**21**	**21**	**21**	**25**
Nickel	**82**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	**1,400**	**1,300**	**1,300**	**1,400**	**1,400**	**1,200**	**1,400**	**1,300**	**930**	**960**	**920**	**900**
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1,300**	ND
Vanadium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	**2,600**	**2,500**	**2,400**	**2,600**	**2,500**	**1,700**	**2,900**	**2,000**	**1,600**	**1,600**	**1,600**	**1,600**
Mercury	ND	NA	NA	ND	ND	ND	ND	**0.87**	NA	NA	NA	NA

RST 3 Sample No.	P001-SW006-01	P001-SW007-01	P001-SWF008-01	P001-SWU008-01	P001-SWF009-01	P001-SWU009-01	P001-SWF010-01	P001-SWU010-01	P001-SWF011-01	P001-SWU011-01	FBF-151211	FBU-151211
Sampling Date	11/12/2015	11/12/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/11/2015	12/11/2015
Sample Matrix	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	DI Water	DI Water
TAL Metal												
Aluminum	**960**	**230**	ND	ND	ND	ND	ND	ND	**130**	**660**	ND	ND
Antimony	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	**17**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	ND	**5,700**	**1,100**	**1,100**	**630**	**590**	**1,500**	**1,600**	**1,200**	**1,400**	ND	ND
Chromium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	**210**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	**1,600**	**2,000**	ND	ND	ND	ND	**110**	**150**	**820**	**14,000**	ND	ND
Lead	**5,100**	**100**	ND	**8.0**	**300**	**300**	**8.6**	**14**	ND	**28**	ND	ND
Magnesium	ND	**1,300**	**810**	**910**	ND	**510**	**670**	**720**	**660**	**770**	ND	ND
Manganese	**33**	**330**	ND	ND	**27**	**25**	**19**	**18**	**39**	**43**	ND	ND
Nickel	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	**880**	**970**	**730**	**730**	**500**	**570**	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	ND	**2,000**	ND	ND	ND	ND	ND	ND	**1,400**	**1,200**	ND	ND
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	**12,000**	**380**	**1,000**	**1,000**	**540**	**530**	**370**	**360**	**20**	**28**	ND	ND
Mercury	**0.24**	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

RST 3 - Removal Support Team 3; TAL - Target Analyte List; ND - Non-detect; No. - Number; NA - Not Applicable

All surface water analytical results reported in micrograms per Liter (µg/L)

Bold result values are detections

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SBG38-0002-01	P001-SBG38-0612-01	P001-SBG39-0002-01	P001-SBG39-0612-01	P001-SBQ38-0002-01	P001-SBQ38-0612-01	P001-SBQ39-0002-01	P001-SBQ39-0612-01	P001-SCA38-0002-01	P001-SCA38-0612-01	P001-SCA39-0002-01
Sampling Date			5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/18/2016	5/16/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,500	3,900	3,700	4,500	4,800	5,000	3,500	4,700	3,700	5,900	8,600
Antimony	94	NS	2.0 U	2.2 U	2.2 U	2.1 U	2.1 U	2.3 U	2.8	1.9 U	2.1 U	2.2 U	3.4 U
Arsenic[a]	68	16	2.4	2.4	5.2	7.0	3.2	2.9	9.0	5.1	3.0	5.5	5.2
Barium[a]	46,000	350	42	64	63	58	52	78	30	25	41	84	35
Beryllium	470	14	0.30 U	0.32 U	0.54	0.49	0.43	0.87	0.32	0.35	0.31 U	1.1	2.1
Cadmium[a]	210	2.5	0.30 U	0.32 U	0.74	0.59	0.76	2.3	0.31 U	0.29 U	0.31 U	3.5	0.52
Calcium	NS	NS	410	860	2,400	2,100	1,100	1,100	970	4,500	580	1,200	170
Chromium	NS*	NS**	4.9	4.7	6.3	7.1	5.2	6.3	5.3	6.5	4.5	8.6	10
Cobalt	70	NS	4.5	4.2	4.1	5.7	5.2	3.5	4.9	6.4	4.5	17	3.5
Copper	9,400	270	17	8.7	27	29	12	11	28	18	6.3	19	120
Iron	160,000	NS	9,700	9,000	11,000	15,000	9,800	8,500	12,000	12,000	9,700	14,000	12,000
Lead	400	400	12	30	140	84	74	140	110	38	65	890	6,500
Magnesium	NS	NS	1,800	1,400	1,300	1,600	2,000	1,600	1,300	2,500	1,500	2,400	1,100
Manganese[a]	5,500	2,000	300	240	190	250	340	140	270	380	420	810	65
Nickel	4,600	140	8.3	8.4	11	14	9.7	10	9.4	13	7.6	17	8.3
Potassium	NS	NS	360	320	380	400	370	360	370	330	300	320	560
Selenium	1,200	36	2.0 U	2.2 U	2.2 U	2.1 U	2.1 U	2.3 U	2.0 U	1.9 U	2.1 U	2.2 U	3.4 U
Silver	1,200	36	0.49 U	0.54 U	0.55 U	0.52 U	0.53 U	0.58 U	0.51 U	0.48 U	0.52 U	0.61	1.20
Sodium	NS	NS	99 U	110 U	110 U	100 U	110 U	120 U	100 U	97 U	100 U	110 U	170 U
Thallium	2.3	NS	2.0 U	2.2 U	2.2 U	2.1 U	2.1 U	2.3 U	2.0 U	1.9 U	2.1 U	2.2 U	3.4 U
Vanadium	1,200	NS	5.9	6.1	9.6	9.0	5.6	9.0	6.9	7.0	5.7	9.6	14
Zinc	70,000	2,200	32	67	170	130	130	250	230	150	110	1,000	310

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SCA39-0612-01	P001-SCB38-0002-01	P001-SCB38-0612-01	P001-SCB39-0002-01	P001-SCB39-0612-01	P001-SCB39-0612-02	P001-SCC38-0002-01	P001-SCC38-0612-01	P001-SCC39-0002-01	P001-SCC39-0612-01	P001-SCD38-0002-01
Sampling Date			5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016
Sample Depth (Inches)			6-12	0-2	6-12	0-2	6-12	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,400	3,300	5,000	4,900	6,200	7,300	4,000	5,800	4,100	5,900	4,500
Antimony	94	NS	2.2 U	2.0 U	2.2 U	2.1 U	2.0 U	1.9 U	2.0 U	2.1 U	2.2 U	2.0 U	2.8 U
Arsenic[a]	68	16	10	1.2	2.0	6.9	5.6	5.2	1.6	4.3	9.1	5.6	3.0
Barium[a]	46,000	350	26	24	62	47	51	57	44	71	27	53	170
Beryllium	470	14	1.2	0.31 U	1.1	1.1	0.54	0.59	0.39	1.4	0.92	0.32 J	1.5
Cadmium[a]	210	2.5	0.33 U	0.31 U	2.0	0.49	0.30 U	0.33	0.35	1.6	0.32 U	0.30 U	6.4
Calcium	NS	NS	100	190	840	510	660	650	350	710	270	1,300	1,900
Chromium	NS*	NS**	8.1	3.4	6.7	7.0	9.2	9.7	3.9	7.5	5.3	9.2	5.3
Cobalt	70	NS	6.8	3.3	5.1	5.6	6.8	8.0	5.0	8.3	4.4	7.2	26
Copper	9,400	270	46	4.3	17	35	17	17	9.3	15	32	17	19
Iron	160,000	NS	17,000	7,200	9,700	14,000	15,000	17,000	8,600	14,000	12,000	16,000	9,800
Lead	400	400	2,600	26	2,000	1,800	390	260	240	1,200	1,300	58	1,100
Magnesium	NS	NS	1,400	1,400	1,900	1,500	2,000	2,300	1,600	2,000	1,200	2,200	1,300
Manganese[a]	5,500	2,000	220	160	150	240	300	460	300	260	190	430	870
Nickel	4,600	140	11	6.0	13	11	15	16	7.7	14	7.7	18	18
Potassium	NS	NS	330	240	340	370	340	410	290	320	340	380 K	290
Selenium	1,200	36	2.2 U	2.0 U	2.2 U	2.1 U	2.0 U	1.9 U	2.0 U	2.1 U	2.2 U	2.0 U	2.8 U
Silver	1,200	36	0.63	0.51 U	0.55 U	0.53 U	0.49	0.69	0.51 U	0.65	0.69	0.49 U	0.71 U
Sodium	NS	NS	110 U	100 U	110 U	110 U	99 U	97 U	100 U	100 U	110 U	98 U	140 U
Thallium	2.3	NS	2.2 U	2.0 U	2.2 U	2.1 U	2.0 U	1.9 U	2.0 U	2.1 U	2.2 U	2.0 U	2.8 U
Vanadium	1,200	NS	14	4.3	8.1	8.3	9.7	11	4.9	9.1	6.7	9.6	10
Zinc	70,000	2,200	110	42	660	220	210	210	97	430	120	140	730

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate.
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006).
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg).
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium.
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium.
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site.
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.			P001-SCD38-0612-01	P001-SCD39-0002-01	P001-SCD39-0612-01	P001-SCE38-0002-01	P001-SCE38-0612-01	P001-SCE39-0002-01	P001-SCE39-0612-01	P001-SCF38-0002-01	P001-SCF38-0612-01	P001-SCF39-0002-01	P001-SCF39-0612-01
Sampling Date			5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016
Sample Depth (Inches)	EPA RMLs for		6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,000	3,600	1,400	4,000	5,100	2,900	3,300	3,500	4,300	2,900	1,700
Antimony	94	NS	2.1 U	2.3 U	2.0 U	2.1 U	2.1 U	2.3 U	1.9 U	2.0 U	2.5 U	2.0 U	2.0 U
Arsenic[a]	68	16	4.3	4.5	26	2.3	3.3	11	9.4	1.5	1.8	2.1	35
Barium[a]	46,000	350	86	32	47	41	54	55	17	27	73	18	47
Beryllium	470	14	2.1	1.3	0.54	0.32 U	0.38 J	1.4	0.29 U	0.30 U	0.54	0.35 J	0.30
Cadmium[a]	210	2.5	3.2	0.34	0.59	0.33	1.1	0.56	0.29 U	0.30 U	2.0	0.30 U	0.30 U
Calcium	NS	NS	1,100	230	190	1,100	2,600	270	96	280	880	630	180
Chromium	NS*	NS**	8.2	4.2	2.0	4.5	7.5	5.8	5.3	3.9	5.4	3.2	2.3
Cobalt	70	NS	15	2.3 U	2.0 U	4.5	6.1	2.4	3.3	3.4	4.8	2.8	2.0 U
Copper	9,400	270	34	57	24	8.6	10	55	15	4.6	10	9.2	18
Iron	160,000	NS	14,000	6,900	10,000	8,500	12,000	12,000	12,000	8,000	9,200	6,900	16,000
Lead	400	400	1,400	3,600	340	100	170	2,500	40	10	280	400	110
Magnesium	NS	NS	2,200	620	270	1,700	2,800	470	1,200	1,400	1,600	1,100	250
Manganese[a]	5,500	2,000	350	47	60	330	230	91	120	240	260	160	65
Nickel	4,600	140	18	5.2	2.4	8.3	13	5.1	6.4	6.4	10	5.2	2.5
Potassium	NS	NS	350	360	260	320	330	340	280	300	320	240	450
Selenium	1,200	36	2.1 U	2.3 U	7.1	2.1 U	2.1 U	2.3 U	2.2	2.0 U	2.5 U	2.0 U	7.9
Silver	1,200	36	0.53 U	0.57 U	0.51 U	0.53 U	0.53 U	0.58	0.48 U	0.51 U	0.61 U	0.50 U	0.50 U
Sodium	NS	NS	110 U	110 U	100 U	110 U	110 U	120 U	96 U	100 U	120 U	100 U	100 U
Thallium	2.3	NS	2.1 U	2.3 U	2.0 U	2.1 U	2.1 U	2.3 U	1.9 U	2.0 U	2.5 U	2.0 U	2.0 U
Vanadium	1,200	NS	10	5.6	3.5	5.0	8.3	7.9	5.9	4.6	7.7	3.9	5.1
Zinc	70,000	2,200	690	190	140	110	500	170	100	26	310	47	79

RST 3 Sample No.			P001-SCG38-0002-01	P001-SCG38-0612-01	P001-SCG39-0002-01	P001-SCG39-0612-01	P001-SCH38-0002-01	P001-SCH38-0612-01	P001-SCH39-0002-01	P001-SCH39-0612-01	P001-SCI38-0002-01	P001-SCI38-0612-01	P001-SCI39-0002-01
Sampling Date			5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016
Sample Depth (Inches)	EPA RMLs for		0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,300	4,600	1,700	3,900	3,300	5,400	2,100	6,000	3,300	4,600	2,300
Antimony	94	NS	2.1 U	2.5 U	2.2 U	2.0 U	2.1 U	3.0 U	2.0	1.9 U	2.0 U	2.3 U	2.7
Arsenic[a]	68	16	1.7	2.3	22	20	1.4	2.7	22	5.8	1.7	2.7	8.0
Barium[a]	46,000	350	25	100	36	14	29	110	34	21	38	47	40
Beryllium	470	14	0.31 U	0.66	0.45	0.30 U	0.31 U	0.68	0.34 J	0.38	0.30 U	0.35 U	0.32 U
Cadmium[a]	210	2.5	0.31 U	3.7	0.33 U	0.30 U	0.31 U	4.4	0.30 U	0.29 U	0.30 U	0.61	0.39
Calcium	NS	NS	340	1,800	490	69	500	2,400	190	87	320	1,400	630
Chromium	NS*	NS**	3.6	5.8	2.7	7.3	3.7	6.9	4.0	7.2	3.5	6.0	4.1
Cobalt	70	NS	3.3	4.9	2.2 U	2.1	3.4	6.1	2.4	7.2	3.4	5.1	4.6
Copper	9,400	270	5.1	15	22	16	5.6	24	23	21	5.3	34	29
Iron	160,000	NS	7,700	9,700	14,000	18,000	7,200	11,000	18,000	14,000	7,900	10,000	12,000
Lead	400	400	8.8	470	520	47	25	690	150	18	28	95	200
Magnesium	NS	NS	1,400	1,800	380	1,400	1,300	1,800	440	1,800	1,300	1,700	490
Manganese[a]	5,500	2,000	210	210	98	81	170	260	95	420	400	300	210
Nickel	4,600	140	6.2	13	2.8	6.7	6.3	15	3.9	13	6.1	11	7.1
Potassium	NS	NS	280	350	460	320	270	360	290	340	260	340	330
Selenium	1,200	36	2.1 U	2.5 U	4.5	3.1	2.1 U	3.0 U	4.3	1.9 U	2.0 U	2.3 U	2.1 U
Silver	1,200	36	0.52 U	0.63 U	0.55 U	0.5 U	0.51 U	0.75 U	0.50 U	0.48 U	0.50 U	0.58 U	0.69
Sodium	NS	NS	100 U	130 U	110 U	99 U	100 U	150 U	100 U	96 U	100 U	120 U	110 U
Thallium	2.3	NS	2.1 U	2.5 U	2.2 U	2.0 U	2.1 U	3.0 U	2.0 U	1.9 U	2.0 U	2.3 U	2.1 U
Vanadium	1,200	NS	4.5	8.8	5.4	8.7	4.3	11	7.4	7.8	4.4	7.7	10
Zinc	70,000	2,200	26	790	90	45	38	950	88	55	39	260	110

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified No - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 36 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.			P001-SCJ39-0612-01	P001-SCJ38-0002-01	P001-SCJ38-0612-01	P001-SCJ39-0002-01	P001-SCJ39-0612-01	P001-SCK38-0002-01	P001-SCK38-0612-01	P001-SCK39-0002-01	P001-SCK39-0612-01	P001-SCL38-0002-01	P001-SCL38-0612-01
Sampling Date			5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016
Sample Depth (Inches)	EPA RMLs for		6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,200	3,400	4,200	2,500	6,500	3,500	5,100	2,500	5,900	3,600	4,800
Antimony	94	NS	2.0 U	2.2 U	2.6 U	3.9	1.8 U	2.1 U	2.3 U	1,000	1.9 U	2.1 U	2.4 U
Arsenic[a]	68	16	10	2.0	3.1	12	8.2	2.0	4.0	190	7.3	2.4	2.9
Barium[a]	46,000	350	31	32	50	34	35	32	53	27	41	31	67
Beryllium	470	14	0.51	0.33 U	0.38 U	0.36	0.44	0.31 U	0.35 U	0.34 U	0.35	0.32 U	0.37 U
Cadmium[a]	210	2.5	0.29 U	0.33 U	1.3	0.37	0.27 U	0.31 U	0.56	0.34 U	0.29 U	0.32 U	1.7
Calcium	NS	NS	490	380	1,500	660	300	560	5,100	930	17,000	620	1,700
Chromium	NS*	NS**	8.5	4.5	5.5	4.1	9.7	3.9	7.8	4.2	8.9	4.0	6.2
Cobalt	70	NS	8.4	3.3	5.3	3.8	8.5	3.5	5.9	2.5	6.3	3.6	7.6
Copper	9,400	270	24	8.2	9.3	40	25	6.3	12	15	20	7.2	10
Iron	160,000	NS	19,000	8,700	9,800	13,000	18,000	8,100	12,000	8,700	16,000	8,500	11,000
Lead	400	400	28	32	130	140	20	39	71	44,000	30	48	110
Magnesium	NS	NS	2,100	1,300	1,500	410	2,500	1,300	3,500	790	2,600	1,400	1,700
Manganese[a]	5,500	2,000	390	320	330	170	390	370	440	95	380	320	250
Nickel	4,600	140	20	6.2	10	5.9	18	6.6	14	6.3	15	6.6	12
Potassium	NS	NS	370	290	380	370	400	300	410	350	460	320	410
Selenium	1,200	36	2.0 U	2.2 U	2.6 U	2.7	1.8 U	2.1 U	2.3 U	2.3 U	1.9 U	2.1 U	2.4 U
Silver	1,200	36	0.52 J	0.6 U	0.64 U	0.73	0.48	0.52 U	0.58 U	1.8	0.49 U	0.53 U	0.61 U
Sodium	NS	NS	98 U	110 U	130 U	110 U	91 U	100 U	120 U	110 U	97 U	110 U	120 U
Thallium	2.3	NS	2.0 U	2.2 U	2.6 U	2.2 U	1.8 U	2.1 U	2.3 U	2.3 U	1.9 U	2.1 U	2.4 U
Vanadium	1,200	NS	10	5.0	7.5	9.6	10	4.8	9.3	6.4	9.6	5.2	9.1
Zinc	70,000	2,200	140	39	260	65	220	52	250	64	68	53	430

RST 3 Sample No.			P001-SCL39-0002-01	P001-SCL39-0612-01	P001-SCM38-0002-01	P001-SCM38-0002-02	P001-SCM38-0612-01	P001-SCM39-0002-01	P001-SCM39-0612-01	P001-SCN38-0002-01	P001-SCN38-0612-01	P001-SCN39-0002-01	P001-SCN39-0002-02
Sampling Date			5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016
Sample Depth (Inches)	EPA RMLs for		0-2	6-12	0-2	0-2	6-12	0-2	6-12	0-2	6-12	0-2	0-2
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,500	6,200	4,600	5,000	7,400	2,500	4,100	3,400	4,000	2,900	2,800
Antimony	94	NS	2.3 U	1.9 U	2.2 U	2.2 U	2.2 U	3.0	2.0 U	2.0 U	2.3 U	2.3 U	2.4 U
Arsenic[a]	68	16	3.8	6.2	3.7	2.6	5.3	8.1	4.9	1.4	2.2	5.3	5.9
Barium[a]	46,000	350	31	37	50	61	59	48	30	25	49	33	38
Beryllium	470	14	0.35 U	0.32	0.33 U	0.33 U	0.34	0.35 U	0.30 U	0.31 U	0.34 U	0.34 U	0.36 U
Cadmium[a]	210	2.5	0.35 U	0.28 U	0.49	0.54	0.33 U	0.43	0.30 U	0.31 U	1.7	0.34 U	0.36 U
Calcium	NS	NS	570	4,900	1,500	1,800	5,900	700	1,100	300	1,100	1,500	2,000
Chromium	NS*	NS**	4.3	9.0	5.4	6.3	11	4.3	5.9	3.9	4.8	4.6	4.3
Cobalt	70	NS	2.7	6.6	4.7	5.0	8.3	2.8	4.8	3.7	5.2	3.5	3.2
Copper	9,400	270	17	26	9.2	10	12	29	28	5.9	8.8	22	23
Iron	160,000	NS	8,000	17,000	10,000	11,000	20,000	14,000	12,000	8,000	8,600	10,000	9,400
Lead	400	400	240	34	100	100	43	240	40	12	88	190	240
Magnesium	NS	NS	650	2,500	1,600	1,800	4,400	610	1,500	1,400	1,500	1,000	970
Manganese[a]	5,500	2,000	100	340	210	210	200	140	250	190	190	170	190
Nickel	4,600	140	5.7	15	9.6	11	19	6.5	11	6.9	9.1	6.9	6.2
Potassium	NS	NS	290	470	470 K	440	520	300	280	280	330	360	370
Selenium	1,200	36	2.3 U	1.9 U	2.2 U	2.2 U	2.2 U	2.3 U	2.0 U	2.0 U	2.3 U	2.3	2.4 U
Silver	1,200	36	0.58 U	0.48	0.55 U	0.55 U	0.55 U	0.65	0.49 U	0.51 U	0.57 U	0.58	0.59 U
Sodium	NS	NS	120 U	95 U	110 U	110 U	110 U	120 U	99 U	100 U	110 U	110 U	120 U
Thallium	2.3	NS	2.3 U	1.9 U	2.2 U	2.2 U	2.2 U	2.3 U	2.0 U	2.0 U	2.3 U	2.3 U	2.4 U
Vanadium	1,200	NS	6.8	9.5	7.7	8.0	12	9.7	7.4	4.7	6.4	7.4	5.9
Zinc	70,000	2,200	59	55	150	200	150	75	45	32	240	67	78

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.			P001-SCN39-0612-01	P001-SCO38-0002-01	P001-SCO38-0612-01	P001-SCO39-0002-01	P001-SCO39-0612-01	P001-SCP38-0002-01	P001-SCP38-0612-01	P001-SCP39-0002-01	P001-SCP39-0612-01	P001-SCQ38-0002-01	P001-SCQ38-0612-01
Sampling Date			5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,700	3,400	4,500	2,000	5,500	3,000	4,500	2,200	6,300	3,100	5,000
Antimony	94	NS	2.0 U	2.0 U	2.2 U	2.3 U	2.0 U	2.1 U	2.3 U	2.2	2.1 U	2.1 U	2.4 U
Arsenic[3]	68	16	7.6	2.2	3.1	6.0	7.5	1.5	3.5	7.4	8.6	1.3	2.0
Barium[3]	46,000	350	26	30	54	30	30	22	54	24	40	25	62
Beryllium	470	14	0.30 U	0.30 U	0.33 U	0.35 U	0.39 J	0.31 U	0.34 U	0.34 U	0.42	0.32 U	0.36 U
Cadmium[4]	210	2.5	0.35	0.30 U	1.1	0.35 U	0.38	0.31 U	0.72	0.34 U	0.31 U	0.32 U	0.95
Calcium	NS	NS	440	490	7,600	700	580	250	3,600	520	700	490	1,300
Chromium	NS*	NS**	5.8	3.8	6.7	3.2	7.1	3.6	6.6	5.0	8.4	3.7	7.1
Cobalt	70	NS	6.6	3.4	4.8	2.7	6.9	2.9	5.8	2.2	9.0	3.0	4.2
Copper	9,400	270	25	7.3	10	17	32	5.3	13	21	26	8.2	16
Iron	160,000	NS	13,000	7,800	9,800	8,500	14,000	7,200	10,000	8,800	16,000	6,500	8,500
Lead	400	400	64	56	99	160	43	9.1	85	200	24	69	170
Magnesium	NS	NS	1,200	1,300	5,400	640	1,800	1,300	2,100	720	2,300	1,300	1,700
Manganese[3]	5,500	2,000	350	300	240	120	360	210	280	100	590	170	120
Nickel	4,600	140	11	6.4	11	5.0	16	5.7	12	4.7	21	6.0	12
Potassium	NS	NS	280	250	370	250	320	270	290	300	330	290	350
Selenium	1,200	36	2.0 U	2.0 U	2.2 U	2.3 U	2.0 U	2.1 U	2.3 U	2.2 U	2.1 U	2.1 U	2.4 U
Silver	1,200	36	0.5 U	0.49 U	0.55 U	0.58 U	0.50 U	0.51 U	0.57 U	0.56 U	0.56	0.53 U	0.59 U
Sodium	NS	NS	100 U	99 U	110 U	120 U	100 U	100 U	110 U	110 U	100 U	110 U	120 U
Thallium	2.3	NS	2.0 U	2.0 U	2.2 U	2.3 U	2.0 U	2.1 U	2.3 U	2.2 U	2.1 U	2.1 U	2.4 U
Vanadium	1,200	NS	7.0	5.0	7.7	5.7	8.5	5.1	7.8	5.6	9.4	4.3	8.6
Zinc	70,000	2,200	240	53	400	53	290	26	260	41	64	78	460

RST 3 Sample No.			P001-SCQ39-0002-01	P001-SCQ39-0612-01	P001-SCR38-0002-01	P001-SCR38-0612-01	P001-SCR39-0002-01	P001-SCR39-0612-01	P001-SCS38-0002-01	P001-SCS38-0612-01	P001-SCS39-0002-01	P001-SCS39-0612-01	P001-SCT38-0002-01
Sampling Date			5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	1,800	5,100	3,400	4,000	1,800	940	3,100	3,500	3,100	6,100	3,500
Antimony	94	NS	2.4	2.0 U	2.0 U	2.1 U	4.0	1.9	2.0 U	2.0 U	9.6	1.9	2.0 U
Arsenic[3]	68	16	7.6	5.7	1.6	2.4	7.0	2.7	1.6	1.7	7.0	6.8	1.7
Barium[3]	46,000	350	34	35	24	45	22	18	22	28	40	39	20
Beryllium	470	14	0.32 U	0.50	0.30 U	0.32 U	0.32 U	0.29 U	0.29 U	0.30 U	0.34 U	0.43 J	0.29 U
Cadmium[3]	210	2.5	0.32 U	0.31 U	0.30 U	0.51	0.32 U	0.29 U	0.29 U	0.30 U	0.38	0.28 U	0.29 U
Calcium	NS	NS	1,200	820	330	820	600	580	230	350	1,500	3,000	220
Chromium	NS*	NS**	3.3	7.2	3.7	5.5	2.4	1.5	3.4	3.9	5.4	9.9	3.9
Cobalt	70	NS	2.3	7.7	3.3	4.1	4.1	2.3	3.1	3.2	4.2	7.6	3.6
Copper	9,400	270	27	21	7.0	11	39	29	5.3	4.4	120	41	7.3
Iron	160,000	NS	8,100	13,000	7,500	7,800	8,100	3,600	7,100	7,600	11,000	20,000	7,900
Lead	400	400	200	27	39	190	110	64	7.7	10	360	73	21
Magnesium	NS	NS	520	1,700	1,500	1,400	330	240	1,300	1,300	1,000	2,600	1,400
Manganese[3]	5,500	2,000	140	330	180	150	160	100	220	190	210	480	200
Nickel	4,600	140	5.0	16	6.4	8.6	5.0	3.7	5.8	5.7	8.8	16	6.4
Potassium	NS	NS	320	330	290	260 K	230	130	260	290	380	410	250
Selenium	1,200	36	2.2 U	2.0 U	2.0 U	2.1 U	2.9	1.9 U	2.0 U	2.0 U	2.3 U	1.9 U	2.0 U
Silver	1,200	36	0.54	0.51 U	0.50 U	0.56	0.60	0.48 U	0.49 U	0.50 U	0.91	0.74	0.53
Sodium	NS	NS	110 U	100 U	100 U	110 U	110 U	95 U	98 U	100 U	110 U	94 U	98 U
Thallium	2.3	NS	2.2 U	2.0 U	2.0 U	2.1 U	2.1 U	1.9 U	2.0 U	2.0 U	2.3 U	1.9 U	2.0 U
Vanadium	1,200	NS	5.6	7.8	5.2	7.2	5.1	2.4	4.0	4.5	9.5	11	4.8
Zinc	70,000	2,200	74	53	63	360	36	36	29	29	110	60	59

Note:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.			P001-SCT38-0612-01	P001-SCT39-0002-01	P001-SCT39-0612-01	P001-SCU38-0002-01	P001-SCU38-0612-01	P001-SCU39-0002-01	P001-SCU39-0612-01	P001-SCV38-0002-01	P001-SCV38-0612-01	P001-SCV39-0002-01	P001-SCV39-0612-01
Sampling Date			5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016
Sample Depth (Inches)	EPA RMLs for		6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,300	2,500	3,200	3,200	4,700	3,000	3,500	3,200	6,300	2,600	4,000
Antimony	94	NS	2.1 U	3.9	2.2	2.1 U	2.5 U	2.3 U	2.1 U	2.1 U	2.1 U	2.3 U	2.1 U
Arsenic[a]	68	16	3.6	15	7.4	2.3	1.9	4.7	1.5	1.4	3.6	5.0	9.6
Barium[a]	46,000	350	50	31	39	22	66	35	26	24	67	33	37
Beryllium	470	14	0.31	0.32 U	0.41 J	0.32 U	0.38 U	0.34 U	0.31 U	0.31 U	0.41	0.34 U	0.31 U
Cadmium[a]	210	2.5	0.47	0.32 U	0.32 U	0.32 U	0.85	0.34 U	0.78	0.31	0.75	0.34 U	0.31 U
Calcium	NS	NS	1,000	1,600	2,500	260	2,000	720	310	280	1,200	930	780
Chromium	NS*	NS**	8.9	3.9	4.6	3.6	6.6	5.4	4.1	3.5	8.6	4.1	6.2
Cobalt	70	NS	5.8	4.1	6.2	3.3	4.7	2.6	3.4	3.1	6.3	4.3	4.3
Copper	9,400	270	11	36	46	6.0	14	24	11	11	12	23	18
Iron	160,000	NS	14,000	14,000	12,000	7,300	9,000	9,800	7,200	6,200	14,000	9,500	13,000
Lead	400	400	280	110	99	18	99	180	110	100	100	210	36
Magnesium	NS	NS	2,200	750	1,000	1,300	1,600	810	1,300	1,200	2,700	840	1,400
Manganese[a]	5,500	2,000	220	240	410	250	230	110	220	190	200	220	270
Nickel	4,600	140	14	6.8	11	5.8	11	5.9	6.4	5.7	16	6.7	11
Potassium	NS	NS	310	320	340	270	300	430	270	260	350	320	320
Selenium	1,200	36	2.1 U	4.3	2.1	2.1 U	2.5 U	2.3 U	2.1 U	2.1 U	2.1 U	2.3 U	2.1 U
Silver	1,200	36	0.73	0.91	0.67	0.53 U	0.63 U	0.79	0.52 U	0.52 U	0.58	0.69	0.61
Sodium	NS	NS	100 U	110 U	110 U	110 U	130 U	110 U	100 U	100 U	100 U	110 U	100 U
Thallium	2.3	NS	2.1 U	2.1 U	2.1 U	2.1 U	2.5 U	2.3 U	2.1 U	2.1 U	2.1 U	2.3 U	2.1 U
Vanadium	1,200	NS	11	7.0	7.0	4.4	8.5	8.9	4.9	4.3	13	5.9	6.6
Zinc	70,000	2,200	240	71	85	43	260	75	180	130	420	100	49

RST 3 Sample No.			P001-SCW38-0002-01	P001-SCW38-0612-01	P001-SCW39-0002-01	P001-SCW39-0612-01	P001-SCX38-0002-01	P001-SCX38-0612-01	P001-SCX39-0002-01	P001-SCX39-0612-01	P001-SCX39-0612-02	P001-SCY38-0002-01	P001-SCY38-0612-01
Sampling Date			5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016
Sample Depth (Inches)	EPA RMLs for		0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	6-12	0-2	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,200	3,500	3,400	4,700	3,900	5,400	2,900	6,500	7,000	4,100	8,100
Antimony	94	NS	1.9 U	2.0 U	2.0 U	1.9 U	2.1 U	2.2 U	2.5 U	2.1 U	2.0 U	2.1 U	2.0 U
Arsenic[a]	68	16	1.5	1.1	6.2	8.2	1.8	2.4	3.5	5.1	5.7	3.4	6.3
Barium[a]	46,000	350	27	31	29	27	24	50	30	46	79	38	85
Beryllium	470	14	0.29 U	0.30 U	0.30 U	0.37	0.32 U	0.44	0.37 U	0.38 J	0.41	0.39 J	0.52
Cadmium[a]	210	2.5	0.29 U	0.30 U	0.30 U	0.29 U	0.32 U	0.33 U	0.37 U	0.31 U	0.30 U	0.32 U	0.30 U
Calcium	NS	NS	390	590	700	500	280	700	24,000	370	440	720	880
Chromium	NS*	NS**	3.6	4.1	5.4	6.2	4.2	7.9	4.9	8.2	8.9	4.6	12
Cobalt	70	NS	3.1	3.4	3.4	4.8	3.6	5.2	2.7	6.0	8.2	4.9	8.2
Copper	9,400	270	5.9	5.5	20	19	8.6	12	20	16	15	15	18
Iron	160,000	NS	7,300	7,900	11,000	13,000	9,400	11,000	7,600	15,000	18,000	9,900	23,000
Lead	400	400	26	18	200	37	60	100	230	20	23	210	96
Magnesium	NS	NS	1,300	1,400	1,100	1,400	1,500	1,900	1,700	1,800	2,000	1,500	3,000
Manganese[a]	5,500	2,000	230	190	160	220	140	170	180	330	660	560	240
Nickel	4,600	140	5.7	6.7	7.3	11	6.7	12	6.2	15	16	7.3	18
Potassium	NS	NS	260	300	320	330	330	310	400	320 K	380	360	350
Selenium	1,200	36	1.9 U	2.0 U	2.0 U	1.9 U	2.1 U	2.2 U	2.5 U	2.1 U	2.0 U	2.1 U	2.0 U
Silver	1,200	36	0.48 U	0.50 U	0.49 U	0.48 U	0.53 U	0.54 U	0.62 U	0.51 U	0.50 U	0.53 U	0.50 U
Sodium	NS	NS	96 U	99 U	99 U	96 U	110 U	110 U	120 U	100 U	99 U	110 U	100 U
Thallium	2.3	NS	1.9 U	2.0 U	2.0 U	1.9 U	2.1 U	2.2 U	2.5 U	2.1 U	2.0 U	2.1 U	2.0 U
Vanadium	1,200	NS	4.2	5.7	8.1	7.6	5.5	9.2	4.9	9.7	12	6.0	13
Zinc	70,000	2,200	43	49	88	42	89	130	110	63	69	130	150

Notes:
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L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SCY39-0002-01	P001-SCY39-0612-01	P001-SCZ38-0002-01	P001-SCZ38-0612-01	P001-SCZ39-0002-01	P001-SCZ39-0612-01	P001-SDA38-0002-01	P001-SDA38-0612-01	P001-SDA39-0002-01	P001-SDA39-0612-01	P001-SDB38-0002-01
Sampling Date			5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/16/2016	5/16/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,500	3,600	5,800	5,300	3,600	5,400	4,200	4,400	5,000	5,300	3,500
Antimony	94	NS	2.0 U	5.6	2.3 U	2.1 U	2.1 U	2.0 U	1.9 U	2.1 U	2.1 U	1.9 U	2.4 U
Arsenic[a]	68	16	35	9.7	3.2	7.3	6.0	7.3	2.3	2.5	11	7.6	1.5
Barium[a]	46,000	350	42	26	82	68	26	37	36	50	70	37	38
Beryllium	470	14	0.43	0.30	0.49 J	0.32 U	0.32 J	0.40 J	0.31	0.40 J	0.42	0.48	0.37 J
Cadmium[a]	210	2.5	0.99	3.5	0.60	0.32 U	0.31 U	0.31 U	0.29 U	0.32 U	0.31 U	0.28 U	0.38
Calcium	NS	NS	9,900	1,600	2,400	130,000	480	770	310	1,100	1,600	1,600	1,200
Chromium	NS*	NS**	5.5	4.5	8.0	7.0	5.2	8.4	4.4	5.2	6.9	8.0	4.3
Cobalt	70	NS	5.9	4.1	5.1	5.3	2.7	6.6	4.5	5.1	6.1	6.3	3.7
Copper	9,400	270	52	120	29	11	42	18	6.1	9.3	33	25	24
Iron	160,000	NS	13,000	10,000	11,000	13,000	9,800	15,000	9,700	9,600	17,000	17,000	7,100
Lead	400	400	880	1,500	360	39	710	38	16	65	81	29	390
Magnesium	NS	NS	3,300	1,300	1,900	4,300	860	2,000	1,500	1,600	1,800	2,100	1,400
Manganese[a]	5,500	2,000	260	130	300	430	97	360	600	420	520	330	210
Nickel	4,600	140	9.4	7.3	13	12	6.2	15	7.1	8.6	14	15	7.2
Potassium	NS	NS	560	380	370	410	350	310	320	340	450	420	240
Selenium	1,200	36	2.0 U	2.0 U	2.3 U	2.1 U	2.1 U	2.0 U	1.9 U	2.1 U	2.1 U	1.9 U	2.4 U
Silver	1,200	36	0.54	0.73	0.58 U	0.53 U	0.51 U	0.51 U	0.49 U	0.54 U	0.52 U	0.47 U	0.60 U
Sodium	NS	NS	100 U	100 U	120 U	110 U	100 U	100 U	97 U	110 U	100 U	94 U	120 U
Thallium	2.3	NS	2.0 U	2.0 U	2.3 U	2.1 U	2.1 U	2.0 U	1.9 U	2.1 U	2.1 U	1.9 U	2.4 U
Vanadium	1,200	NS	6.2	5.2	11	8.4	8.2	9.0	5.8	7.1	8.4	8.7	5.0
Zinc	70,000	2,200	590	2,400	340	87	110	590	35	140	88	50	260

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDB38-0612-01	P001-SDB39-0002-01	P001-SDB39-0612-01	P001-SDC38-0002-01	P001-SDC38-0612-01	P001-SDC39-0002-01	P001-SDC39-0612-01	P001-SDD38-0002-01	P001-SDD38-0612-01	P001-SDD39-0002-01	P001-SDD39-0002-02
Sampling Date			5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016
Sample Depth (Inches)			6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,700	3,200	6,700	3,800	5,400	2,900	8,100	4,600	4,000	4,300	4,200
Antimony	94	NS	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.1 U	2.0 U	2.3 U	2.3 U	2.0 U	1.9 U
Arsenic[a]	68	16	6.9	8.7	15	1.7	3.5	14	8.3	1.3	1.1	12	10
Barium[a]	46,000	350	47	35	62	37	49	17	53	55	48	27	30
Beryllium	470	14	0.32 J	0.31 U	0.67	0.33 U	0.33 U	0.31 U	0.81	0.35	0.34	0.48	0.45
Cadmium[a]	210	2.5	1.9	0.31 U	0.30 U	0.33 U	0.33 U	0.31 U	0.30 U	0.73	0.34 U	0.44	0.40
Calcium	NS	NS	13,000	990	1,700	730	2,500	400	300	1,000	850	870	870
Chromium	NS*	NS**	8.2	4.7	9.6	4.2	7.7	4.2	10	5.9	5.6	5.7	6.2
Cobalt	70	NS	8.0	4.1	10	4.0	5.9	2.6	11	5.0	3.8	8.0	6.1
Copper	9,400	270	190	23	30	8.0	14	19	39	13	10	26	26
Iron	160,000	NS	15,000	11,000	23,000	8,200	12,000	11,000	21,000	8,700	6,700	13,000	15,000
Lead	400	400	6,100	120	26	53	87	60	33	150	140	36	90
Magnesium	NS	NS	8,500	1,100	2,200	1,500	2,500	940	2,300	1,600	1,200	1,500	1,400
Manganese[a]	5,500	2,000	340	250	710	230	300	150	1,100	160	90	270	370
Nickel	4,600	140	14	7.5	18	7.2	13	4.8	23	11	10	16	12
Potassium	NS	NS	330	340	410	270	320	330	420	300	220	410 K	370
Selenium	1,200	36	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.8	2.0 U	2.3 U	2.3 U	2.0 U	1.9 U
Silver	1,200	36	2.80	0.52 U	0.51 U	0.55 U	0.56 U	0.51 U	0.50 U	0.58 U	0.56 U	0.50 U	0.48 U
Sodium	NS	NS	110 U	100 U	100 U	110 U	110 U	100 U	100 U	120 U	110 U	100 U	97 U
Thallium	2.3	NS	2.1 U	2.1 U	2.0 U	2.2 U	2.2 U	2.1 U	2.0 U	2.3 U	2.3 U	2.0 U	1.9 U
Vanadium	1,200	NS	9.5	5.9	14	5.3	8.7	5.3	13	6.8	6.9	6.1	7.1
Zinc	70,000	2,200	2,300	98	61	120	230	41	99	440	240	480	320

Notes:
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TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
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All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Value in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.			P001-SDD39-0612-01	P001-SDE38-0002-01	P001-SDE38-0612-01	P001-SDE39-0002-01	P001-SDE39-0612-01	P001-SDF38-0002-01	P001-SDF38-0612-01	P001-SDF39-0002-01	P001-SDF39-0612-01	P001-SDG38-0002-01	P001-SDG38-0612-01
Sampling Date			5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016
Sample Depth (Inches)	EPA RMLs for		6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	4,300	5,600	6,400	3,600	5,700	4,100	3,800	3,600	4,800	4,000	7,600
Antimony	94	NS	1.9 U	2.5 U	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	1.9 U	2.0 U	2.0 U	2.1 U
Arsenic[3]	68	16	5.7	1.8	5.5	9.7	9.3	2.5	2.9	6.1	4.8	2.1	6.9
Barium[3]	46,000	350	35	64	48	26	35	33	30	29	29	33	54
Beryllium	470	14	0.30	0.38 U	0.37	0.29 U	0.44	0.29 U	0.30 U	0.29 U	0.29 U	0.31 U	0.35 J
Cadmium[3]	210	2.5	0.35	0.91	0.86	0.29 U	0.31 U	0.29 U	0.30 U	0.29 U	0.29 U	0.31 U	0.47
Calcium	NS	NS	750	1,800	5,400	480	300	400	470	380	540	640	5,000
Chromium	NS*	NS**	6.3	7.2	9.8	5.3	7.8	4.4	4.0	5.3	6.3	4.6	11
Cobalt	70	NS	4.8	4.7	8.1	3.4	7.9	5.7	4.1	3.9	4.6	4.5	9.7
Copper	9,400	270	16	18	13	23	31	5.3	11	23	17	10	18
Iron	160,000	NS	13,000	10,000	16,000	13,000	18,000	9,700	8,800	10,000	12,000	10,000	19,000
Lead	400	400	20	160	51	79	33	7.6	160	140	26	11	49
Magnesium	NS	NS	1,500	1,900	4,500	1,200	1,800	1,600	1,400	1,100	1,400	1,800	5,100
Manganese[3]	5,500	2,000	350	220	520	190	340	590	360	280	260	220	280
Nickel	4,600	140	11	11	17	6.8	15	7.3	6.4	7.4	12	8.7	20
Potassium	NS	NS	300	380	400	360	320	330	310	300	290	320	440
Selenium	1,200	36	1.9 U	2.5 U	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	1.9 U	2.0 U	2.0 U	2.1 U
Silver	1,200	36	0.48 U	0.63 U	0.51	0.49 U	0.51 U	0.49 U	0.50 U	0.49 U	0.49 U	0.51 U	0.51 U
Sodium	NS	NS	96 U	130 U	100 U	98 U	100 U	98 U	100 U	97 U	98 U	100 U	100 U
Thallium	2.3	NS	1.9 U	2.5 U	2.1 U	2.0 U	2.0 U	2.0 U	2.0 U	1.9 U	2.0 U	2.0 U	2.1 U
Vanadium	1,200	NS	7.3	9.3	11	7.2	9.0	5.6	5.1	7.4	8.4	5.3	13
Zinc	70,000	2,200	260	530	630	52	52	27	130	60	53	40	180

RST 3 Sample No.			P001-SDG39-0002-01	P001-SDG39-0612-01	P001-SDH38-0002-01	P001-SDH38-0612-01	P001-SDH39-0002-01	P001-SDH39-0612-01	P001-SDI38-0002-01	P001-SDI38-0612-01	P001-SDI38-0612-02	P001-SDI39-0002-01	P001-SDI39-0612-01
Sampling Date			5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016
Sample Depth (Inches)	EPA RMLs for		0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	6-12	0-2	6-12
Sample Matrix	Residential Soil[1]	NYSDEC RUSCO[2]	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,400	6,900	4,000	6,300	4,200	4,700	4,000	5,800	6,000	5,700	5,800
Antimony	94	NS	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	2.0 U	2.1 U	2.3 U	2.4 U	1.8 U	1.9 U
Arsenic[3]	68	16	8.2	6.9	2.3	3.2	8.9	5.1	1.9	2.7	2.4	7.1	6.8
Barium[3]	46,000	350	25	32	39	56	30	31	28	72	72	26	41
Beryllium	470	14	0.30 U	0.62	0.30 U	0.34 J	0.31 U	0.55	0.32 U	0.41 J	0.36 U	0.32	0.31
Cadmium[3]	210	2.5	0.30 U	0.29 U	0.30 U	0.37	0.31 U	0.30 U	0.32 U	0.71	0.60	0.27 U	0.29 U
Calcium	NS	NS	390	240	400	1,100	490	430	300	1,600	1,500	210	250
Chromium	NS*	NS**	4.6	9.8	5.1	9.0	6.1	6.8	4.4	8.0	7.9	8.5	8.7
Cobalt	70	NS	3.3	9.1	4.6	5.8	4.3	5.8	4.5	8.5	8.4	6.2	6.9
Copper	9,400	270	15	24	7.5	15	24	20	5.5	19	19	17	18
Iron	160,000	NS	11,000	19,000	11,000	13,000	14,000	12,000	8,900	11,000	11,000	17,000	18,000
Lead	400	400	43	25	12	63	44	16	11	68	68	26	22
Magnesium	NS	NS	1,300	2,700	1,700	2,300	1,700	1,600	1,500	1,500	1,500	2,000	1,900
Manganese[3]	5,500	2,000	170	470	200	140	200	290	230	190	170	350	320
Nickel	4,600	140	7.5	27	8.7	15	8.8	14	7.1	15	15	13	14
Potassium	NS	NS	330	400	310	340	400	320	280	270 K	280	330	330
Selenium	1,200	36	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	2.0 U	2.1 U	2.3 U	2.4 U	1.8 U	1.9 U
Silver	1,200	36	0.50 U	0.49 U	0.50 U	0.53 U	0.51 U	0.50 U	0.53 U	0.58 U	0.60 U	0.49	0.50
Sodium	NS	NS	100 U	98 U	100 U	110 U	100 U	100 U	110 U	120 U	120 U	91 U	96 U
Thallium	2.3	NS	2.0 U	2.0 U	2.0 U	2.1 U	2.0 U	2.0 U	2.1 U	2.3 U	2.4 U	1.8 U	1.9 U
Vanadium	1,200	NS	5.4	9.7	5.7	9.9	7.3	7.0	5.4	11	11	9.5	10
Zinc	70,000	2,200	48	96	35	150	51	46	36	180	180	54	55

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[3]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDJ38-0002-01	P001-SDJ38-0612-01	P001-SDJ39-0002-01	P001-SDJ39-0612-01	P001-SDK38-0002-01	P001-SDK38-0612-01	P001-SDK39-0002-01	P001-SDK39-0612-01	P001-SDL38-0002-01	P001-SDL38-0612-01	P001-SDL39-0002-01
Sampling Date			5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,200	4,500	4,200	6,900	3,200	5,300	5,300	6,600	3,300	4,900	3,500
Antimony	94	NS	2.2 U	2.3 U	2.1 U	2.0 U	2.0 U	2.3 U	2.0 U	1.9 U	2.0 U	2.2 U	2.1 U
Arsenic[a]	68	16	1.3	2.1	8.1	8.7	1.6	2.9	9.7	10	1.4	3.0	7.0
Barium[a]	46,000	350	22	47	20	53	25	48	36	49	23	45	28
Beryllium	470	14	0.32 U	0.34 U	0.31 U	0.44	0.30 U	0.35 U	0.31 J	0.49	0.30 U	0.33 U	0.31 U
Cadmium[a]	210	2.5	0.32 U	0.37	0.31 U	0.30 U	0.30 U	1.1	0.30 U	0.28 U	0.30 U	0.53	0.31 U
Calcium	NS	NS	260	1,800	390	2,600	460	1,800	750	4,700	240	1,400	560
Chromium	NS*	NS**	3.5	6.2	6.3	10	3.7	7.2	6.8	9.6	3.5	6.5	5.5
Cobalt	70	NS	3.1	4.2	4.0	7.6	3.4	4.8	7.9	7.2	3.2	4.9	3.5
Copper	9,400	270	4.5	12	17	21	6.0	15	25	21	5.0	13	21
Iron	160,000	NS	7,400	9,100	14,000	19,000	7,800	11,000	16,000	20,000	7,500	12,000	13,000
Lead	400	400	9.0	76	65	18	21	140	46	23	14	160	240
Magnesium	NS	NS	1,300	1,500	1,400	2,700	1,300	2,000	1,700	2,400	1,300	1,800	1,200
Manganese[a]	5,500	2,000	140	180	220	470	170	220	540	440	160	200	180
Nickel	4,600	140	5.7	10	7.2	20	6.0	12	15	17	5.9	11	7.8
Potassium	NS	NS	250	280	340	350	270	330	320	340	250	290	340
Selenium	1,200	36	2.2 U	2.3 U	2.1 U	2.0 U	2.0 U	2.3 U	2.0 U	1.9 U	2.0 U	2.2 U	2.1 U
Silver	1,200	36	0.54 U	0.56 U	0.56	0.54	0.49 U	0.58 U	0.64	0.51	0.50 U	0.64	0.67
Sodium	NS	NS	110 U	110 U	100 U	99 U	99 U	120 U	100 U	93 U	100 U	110 U	100 U
Thallium	2.3	NS	2.2 U	2.3 U	2.1 U	2.0 U	2.0 U	2.3 U	2.0 U	1.9 U	2.0 U	2.2 U	2.1 U
Vanadium	1,200	NS	4.5	8.4	7.5	11	4.6	10	8.3	11	4.5	8.8	7.5
Zinc	70,000	2,200	34	160	44	61	78	480	88	80	33	290	82

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDL39-0612-01	P001-SDM38-0002-01	P001-SDM38-0612-01	P001-SDM39-0002-01	P001-SDM39-0002-02	P001-SDM39-0612-01	P001-SDN38-0002-01	P001-SDN38-0612-01	P001-SDN39-0002-01	P001-SDN39-0612-01	P001-SDO38-0002-01
Sampling Date			5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/17/2016	5/18/2016	5/18/2016	5/17/2016	5/17/2016	5/18/2016
Sample Depth (Inches)			6-12	0-2	6-12	0-2	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	6,100	3,400	4,800	4,800	5,100	4,800	3,600	4,800	3,900	6,200	3,400
Antimony	94	NS	1.9 U	2.0 U	2.3 U	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	1.9 U	2.0 U	2.0 U
Arsenic[a]	68	16	6.6	2.0	2.3	6.2	8.7	6.1	1.8	2.3	11	7.9	1.8
Barium[a]	46,000	350	42	29	42	24	27	38	27	45	29	52	28
Beryllium	470	14	0.39	0.30 U	0.34 U	0.30 U	0.30 U	0.38	0.29 U	0.32 U	0.29 U	0.34	0.30 U
Cadmium[a]	210	2.5	0.28 U	0.30 U	0.90	0.30 U	0.30 U	0.28 U	0.29 U	0.32 U	0.29 U	0.30 U	0.30 U
Calcium	NS	NS	630	400	1,300	450	540	700	340	900	810	1,100	560
Chromium	NS*	NS**	8.8	3.8	6.2	6.8	7.7	6.4	4.1	6.4	5.7	9.2	3.8
Cobalt	70	NS	7.6	3.7	4.3	5.6	5.3	5.9	3.8	3.8	4.2	7.7	3.5
Copper	9,400	270	21	5.2	25	18	19	15	6.1	8.0	24	20	5.5
Iron	160,000	NS	16,000	8,500	9,900	13,000	15,000	14,000	8,800	9,500	13,000	20,000	8,500
Lead	400	400	24	8.9	310	36	53	15	13	62	68	19	20
Magnesium	NS	NS	2,000	1,400	1,700	1,800	1,900	1,600	1,400	1,500	1,400	2,200	1,400
Manganese[a]	5,500	2,000	450	280	190	300	270	380	230	170	260	400	220
Nickel	4,600	140	16	6.3	10	13	13	15	6.9	8.8	9.8	17	6.2
Potassium	NS	NS	310	260	260	320 K	350	290	250	240	370	330	230
Selenium	1,200	36	1.9 U	2.0 U	2.3 U	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	1.9 U	2.0 U	2.0 U
Silver	1,200	36	0.55	0.51	0.57	0.53	0.61	0.63	0.51	0.53 U	0.65	0.65	0.50 U
Sodium	NS	NS	93 U	100 U	110 U	98 U	99 U	94 U	97 U	110 U	97 U	100 U	100 U
Thallium	2.3	NS	1.9 U	2.0 U	2.3 U	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	1.9 U	2.0 U	2.0 U
Vanadium	1,200	NS	9.6	4.7	8.8	7.9	8.8	7.4	5.3	7.7	7.0	10	5.3
Zinc	70,000	2,200	110	35	630	65	67	57	38	110	53	53	50

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified. No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 550,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO - For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.			P001-SDO38-0612-01	P001-SDO39-0002-01	P001-SDO39-0612-01	P001-SDP38-0002-01	P001-SDP38-0612-01	P001-SDP39-0002-01	P001-SDP39-0612-01	P001-SDQ38-0002-01	P001-SDQ38-0612-01	P001-SDQ39-0002-01	P001-SDQ39-0612-01
Sampling Date			5/18/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,600	4,400	7,500	5,000	5,600	2,700	5,000	4,800	4,600	3,900	5,600
Antimony	94	NS	2.3 U	2.1 U	2.0 U	2.3 U	2.2 U	2.1 U	2.0 U	2.2 U	2.0 U	2.0 U	2.0 U
Arsenic[a]	68	16	3.1	9.1	9.1	1.9	2.9	15	6.9	3.4	3.0	17	10
Barium[a]	46,000	350	57	28	49	56	51	27	34	52	45	22	39
Beryllium	470	14	0.34 U	0.31 U	0.31	0.34 U	0.41	0.31 U	0.34	0.33 U	0.30 U	0.30 U	0.41
Cadmium[a]	210	2.5	0.41	0.31 U	0.29 U	0.40	0.45	0.31 U	0.30 U	0.33 U	0.30 U	0.30 U	0.30 U
Calcium	NS	NS	2,500	930	860	880	2,700	950	400	1,200	8,300	680	22,000
Chromium	NS*	NS**	7.0	6.7	11	6.6	8.0	4.3	7.2	6.8	6.7	5.7	7.5
Cobalt	70	NS	4.8	6.4	7.4	4.9	5.4	2.5	7.0	4.4	4.6	5.9	6.9
Copper	9,400	270	13	23	21	10	12	18	17	8.6	11	24	20
Iron	160,000	NS	11,000	15,000	19,000	10,000	12,000	11,000	13,000	10,000	11,000	16,000	16,000
Lead	400	400	160	130	23	110	100	48	16	110	48	52	24
Magnesium	NS	NS	1,800	1,500	2,500	1,700	2,500	950	1,600	1,600	4,900	1,400	2,700
Manganese[a]	5,500	2,000	260	290	360	170	150 J	110 J	300 J	290 J	210 J	260 J	500 J
Nickel	4,600	140	11	12	18	11	13	5.8	13	10	11	10	17
Potassium	NS	NS	310	340	390	280	300	340	300	210	270	310	390
Selenium	1,200	36	2.3 U	2.1 U	2.0 U	2.3 U	2.2 U	3.1	2.0 U	2.2 U	2.0 U	2.4	2.0 U
Silver	1,200	36	0.56 U	0.73	0.66	0.57 U	0.55 U	0.52 U	0.50 U	0.55 U	0.50 U	0.51 U	0.49 U
Sodium	NS	NS	110 U	100 U	98 U	110 U	110 U	100 U	100 U	110 U	100 U	100 U	99 U
Thallium	2.3	NS	2.3 U	2.1 U	2.0 U	2.3 U	2.2 U	2.1 U	2.0 U	2.2 U	2.0 U	2.0 U	2.0 U
Vanadium	1,200	NS	10	7.8	12	9.1	8.7	5.4	8.0	8.7	6.9	6.8	9.1
Zinc	70,000	2,200	240	95	61	140	140	36	38	110	68	110	71

RST 3 Sample No.			P001-SDR38-0002-01	P001-SDR38-0612-01	P001-SDR39-0002-01	P001-SDR39-0002-02	P001-SDR39-0612-01	P001-SDS38-0002-01	P001-SDS38-0612-01	P001-SDS39-0002-01	P001-SDS39-0612-01	P001-SDT38-0002-01	P001-SDT38-0612-01
Sampling Date			5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016
Sample Depth (Inches)	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	0-2	6-12	0-2	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,500	3,700	5,500 J	5,900	6,600	5,100	6,100	3,700	4,600	5,300	5,100
Antimony	94	NS	2.0 U	2.1 U	2.1 U	2.0 U	2.1 U	2.3 U	2.0 U	2.0 U	2.1 U	2.4 U	2.1 U
Arsenic[a]	68	16	1.7	2.1	7.0	9.0	5.1	2.9	4.3	8.0	5.0	4.6	4.0
Barium[a]	46,000	350	24	36	26 J	35	53	56	43	36	35	68	52
Beryllium	470	14	0.30 U	0.31 U	0.32 U	0.34 J	0.43	0.34	0.37 J	0.30 U	0.36 J	0.37 U	0.40
Cadmium[a]	210	2.5	0.30 U	0.31 U	0.32 U	0.30 U	0.31 U	0.50	0.31 U	0.30 U	0.31 U	0.50	0.31 U
Calcium	NS	NS	240	880	520 J	650	550	1,300	1,300	790	330	2,500	37,000
Chromium	NS*	NS**	3.9	4.6	8.3 J	7.9	9.4	7.3	8.5	5.5	5.9	7.4	7.2
Cobalt	70	NS	3.6	3.6	7.0 J	7.0	7.7	5.8	9.7	41	6.1	5.5	4.9
Copper	9,400	270	4.7	7.0	22	22	20	10	9.7	19	17	11	9.8
Iron	160,000	NS	8,300	8,000	18,000 J	23,000	16,000	11,000	16,000	12,000	11,000	13,000	13,000
Lead	400	400	7.3	52	36 J	58	27	130	90	81	15	110	77
Magnesium	NS	NS	1,400	1,300	1,900 J	1,600	2,000	1,800	2,300	1,300	1,400	2,100	3,100
Manganese[a]	5,500	2,000	300 J	270 J	380 J	1100 J	370 J	230 J	200 J	450 J	360 J	410 J	280 J
Nickel	4,600	140	6.1	7.2	13 L	11	20	12	16	15	14	13	11
Potassium	NS	NS	260	220	330 K	360	350	240	240	300	290	320	300
Selenium	1,200	36	2.0 U	2.1 U	2.1 U	2.0 U	2.1 U	2.3 U	2.0 U	2.0 U	2.1 U	2.4 U	2.1 U
Silver	1,200	36	0.50 U	0.52 U	0.53 U	0.50 U	0.52 U	0.57 U	0.51 U	0.50 U	0.51 U	0.61 U	0.52 U
Sodium	NS	NS	100 U	100 U	110 U	100 U	100 U	110 U	100 U	100 U	100 U	120 U	100 U
Thallium	2.3	NS	2.0 U	2.1 U	2.1 UJ	2.0 U	2.1 U	2.3 U	2.0 U	2.0 U	2.1 U	2.4 U	2.1 U
Vanadium	1,200	NS	4.7	5.5	9.8 J	12	9.6	9.4	9.4	6.9	6.7	9.6	8.1
Zinc	70,000	2,200	26	68	57 J	71	64	150	180	57	51	170	110

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified, No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 550,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDT39-0002-01	P001-SDT39-0612-01	P001-SDU38-0002-01	P001-SDU38-0612-01	P001-SDU39-0002-01	P001-SDU39-0612-01	P001-SDV38-0002-01	P001-SDV38-0612-01	P001-SDV39-0002-01	P001-SDV39-0612-01	P001-SDW38-0002-01
Sampling Date			5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	2,500	5,600	6,300	5,400	3,200	7,100	5,700	5,500	3,600	7,500	5,300
Antimony	94	NS	2.2 U	2.2 U	2.3 U	2.0 U	2.1 U	2.0 U	2.4 U	1.9 U	2.1 U	1.9 U	2.4 U
Arsenic[a]	68	16	3.4	1.6	6.0	5.2	9.0	8.3	5.1	4.4	15	8.4	2.9
Barium[a]	46,000	350	20	38	60	42	29	41	64	38	29	55	55
Beryllium	470	14	0.32 U	0.52	0.38 J	0.30 U	0.31 U	0.30 U	0.36 U	0.28 U	0.31 U	0.40	0.36 U
Cadmium[a]	210	2.5	0.32 U	0.32 U	0.39	0.30 U	0.31 U	0.30 U	0.41	0.28 U	0.31 U	0.29 U	0.48
Calcium	NS	NS	720	530	2,400	9,100	630	140	3,100	19,000	1,400	910	2,500
Chromium	NS*	NS**	4.0	6.6	8.9	8.3	5.1	11	8.1	8.2	5.1	11	7.2
Cobalt	70	NS	2.2 U	3.4	5.9	5.9	3.4	6.6	6.0	5.7	4.8	7.6	5.0
Copper	9,400	270	12	7.7	15	10	22	23	14	12	24	18	14
Iron	160,000	NS	7,200	7,600	15,000	15,000	13,000	21,000	13,000	14,000	13,000	22,000	9,800
Lead	400	400	62	85	140	51	58	66	140	64	79	27	150
Magnesium	NS	NS	890	1,400	2,100	5,100	990	2,300	2,000	9,600	1,200	2,600	1,800
Manganese[a]	5,500	2,000	74 J	72 J	350	410	140	440	340	410	260	480	240
Nickel	4,600	140	5.4	9.2	13	14	7.5	15	13	14	9.9	16	12
Potassium	NS	NS	270	250	270 K	320 K	390 K	380 K	300 K	350 K	390 K	340 K	330 K
Selenium	1,200	36	2.2 U	2.2 U	2.3 U	2.0 U	2.1 U	2.0 U	2.4 U	1.9 U	2.7	1.9 U	2.4 U
Silver	1,200	36	0.54 U	0.54 U	0.59	0.50 U	0.56	0.50 U	0.60 U	0.47 U	0.54	0.48 U	0.60 U
Sodium	NS	NS	110 U	110 U	110 U	100 U	100 U	100 U	120 U	95 U	100 U	97 U	120 U
Thallium	2.3	NS	2.2 U	2.2 U	2.3 U	2.0 U	2.1 U	2.0 U	2.4 U	1.9 U	2.1 U	1.9 U	2.4 U
Vanadium	1,200	NS	4.2	6.8	12	9.4	8.1	11	11	8.6	6.3	12	10
Zinc	70,000	2,200	110	110	170	97	43	73	160	94	69	57	190

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDW38-0612-01	P001-SDW39-0002-01	P001-SDW39-0612-01	P001-SDX38-0002-01	P001-SDX38-0612-01	P001-SDX38-0612-02	P001-SDX39-0002-01	P001-SDX39-0612-01	P001-SDY38-0002-01	P001-SDY38-0612-01	P001-SDY39-0002-01
Sampling Date			5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016
Sample Depth (Inches)			6-12	0-2	6-12	0-2	6-12	6-12	0-2	6-12	0-2	6-12	0-2
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,700	3,800	6,700	4,100	5,500	4,900	3,700	6,900	8,900	4,700	3,100
Antimony	94	NS	1.9 U	2.1 U	1.9 U	2.2 U	2.1 U	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	2.1 U
Arsenic[a]	68	16	4.1	4.3	6.5	2.3	3.2	2.7	9.5	5.7	10	3.7	6.9
Barium[a]	46,000	350	45	26	37	42	39	37	33	50	110	52	27
Beryllium	470	14	0.34 J	0.31 U	0.43 J	0.33 U	0.31 U	0.30 U	0.30 U	0.41 J	0.48	0.31 U	0.31 U
Cadmium[a]	210	2.5	0.29 U	0.31 U	0.67	0.33 U	0.31 U	0.30 U	0.30 U	0.29 U	0.29 U	0.31 U	0.31 U
Calcium	NS	NS	26,000	600	840	1,400	1,900	2,900	1,100	560	4,000	1,400	1,300
Chromium	NS*	NS**	7.9	5.5	7.7	4.4	7.4	6.7	5.5	7.7	8.3	4.7	5.1
Cobalt	70	NS	5.9	3.6	8.0	5.4	5.8	4.9	3.5	7.0	11	5.2	3.9
Copper	9,400	270	12	15	23	9.4	11	10	23	23	27	7.1	22
Iron	160,000	NS	13,000	14,000	16,000	7,900	12,000	10,000	12,000	15,000	18,000	10,000	10,000
Lead	400	400	69	130	39	110	82	88	78	110	92	24	190
Magnesium	NS	NS	5,600	1,300	1,900	1,500	2,300	2,400	1,300	1,800	3,600	1,900	1,100
Manganese[a]	5,500	2,000	270	230	520	320	230	220	180	510	790	590	170
Nickel	4,600	140	14	8.4	19	7.4	12	11	8.2	14	16	7.9	7.7
Potassium	NS	NS	400 K	300 K	340 K	350 K	300 K	340 K	470 K	350 K	730	420 K	340 K
Selenium	1,200	36	1.9 U	2.1 U	1.9 U	2.2 U	2.1 U	2.0 U	2.1	1.9 U	1.9 U	2.1 U	2.1 U
Silver	1,200	36	0.49 U	0.53	0.51	0.54 U	0.57	0.53	0.59	0.56	0.53	0.56	0.59
Sodium	NS	NS	97 U	100 U	97 U	110 U	100 U	100 U	100 U	97 U	96 U	100 U	100 U
Thallium	2.3	NS	1.9 U	2.1 U	1.9 U	2.2 U	2.1 U	2.0 U	2.0 U	1.9 U	1.9 U	2.1 U	2.1 U
Vanadium	1,200	NS	8.4	6.7	9.4	5.4	8.0	7.4	7.2	9.8	8.4	5.5	6.2
Zinc	70,000	2,200	110	77	860	63	110	110	69	84	65	35	120

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified; No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SDY39-0002-02	P001-SDY39-0612-01	P001-SDZ38-0002-01	P001-SDZ38-0612-01	P001-SDZ39-0002-01	P001-SDZ39-0612-01	P001-SEA38-0002-01	P001-SEA38-0612-01	P001-SEA39-0002-01	P001-SEA39-0002-02	P001-SEA39-0612-01
Sampling Date			5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	0-2	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	3,500	5,400	8,500	7,900	3,700	5,200	6,600	4,200	3,600	3,600	5,300
Antimony	94	NS	2.1 U	1.9 U	1.9 U	2.1 U	2.0 U	1.9 U	1.9 U	1.9 U	2.1 U	2.3	2.0 U
Arsenic[a]	68	16	8.3	9.6	14	13	7.7	5.7	6.8	3.4	7.6	5.8	11
Barium[a]	46,000	350	33	51	100	90	35	38	69	41	39	44	43
Beryllium	470	14	0.31 U	0.33 J	0.49 J	0.60	0.29 U	0.36	0.42 J	0.28 U	0.39 J	0.33 U	0.35
Cadmium[a]	210	2.5	0.31 U	0.29 U	0.29 U	0.31 U	0.29 U	0.28 U	0.29 U	0.28 U	0.32 U	0.33 U	0.30 U
Calcium	NS	NS	1,300	50,000 J	4,800	3,700	970	760	2,300	760	810	860	2,900
Chromium	NS*	NS**	5.3	7.4	8.0	8.2	5.4	7.3	6.7	4.6	7.5	5.4	7.0
Cobalt	70	NS	4.6	14	11	12	5.0	5.0	7.7	4.9	5.2	5.4	7.0
Copper	9,400	270	21	20	23	20	23	16	11	6.2	24	22	20
Iron	160,000	NS	12,000	16,000	18,000	15,000	12,000	12,000	14,000	9,300	15,000	12,000	14,000
Lead	400	400	200	27	56	280	110	160	65	27	130	130	78
Magnesium	NS	NS	1,200	3,300	3,600	3,200	1,200	1,800	2,900	1,800	1,200	1,300	1,900
Manganese[a]	5,500	2,000	270	360	930	570	260	260	640	410	250	260	450
Nickel	4,600	140	9.1	15	16	14	9.3	11	12	7.6	9.7	8.7	14
Potassium	NS	NS	390 K	430 K	700	690	420 K	520	590	390 K	390 K	400 K	430 K
Selenium	1,200	36	2.1 U	1.9 U	1.9 U	2.1 U	2.0 U	1.9 U	1.9 U	1.9 U	2.1 U	2.2 U	2.0 U
Silver	1,200	36	0.62	0.49 U	0.61	0.65	0.64	0.54	0.63	0.51	0.62	0.65	0.60
Sodium	NS	NS	100 U	97 U	97 U	100 U	98 U	94 U	96 U	93 U	110 U	110 U	100 U
Thallium	2.3	NS	2.1 U	1.9 U	1.9 U	2.1 U	2.0 U	1.9 U	1.9 U	1.9 U	2.1 U	2.2 U	2.0 U
Vanadium	1,200	NS	7.3	9.2	8.1	9.0	7.6	8.6	6.9	5.2	7.4	7.6	7.9
Zinc	70,000	2,200	120	50	51	140	68	83	51	32	67	70	67

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SEB38-0002-01	P001-SEB38-0612-01	P001-SEB39-0002-01	P001-SEB39-0612-01	P001-SEC38-0002-01	P001-SEC38-0612-01	P001-SEC38-0612-02	P001-SEC39-0002-01	P001-SEC39-0612-01	P001-SED38-0002-01	P001-SED38-0612-01
Sampling Date			5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	6-12	0-2	6-12	0-2	6-12
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
TAL Metal													
Aluminum	230,000	NS	5,800	5,900	1,800	4,000	4,500	5,500	5,400	1,800	4,700	6,000	4,200
Antimony	94	NS	2.0 U	2.4 U	2.3	2.0 U	2.0 U	2.1 U	2.0 U	2.1 U	2.0 U	1.9 U	2.1 U
Arsenic[a]	68	16	6.8	4.3	3.7	4.9	3.2	3.6	3.7	10	5.8	4.3	2.5
Barium[a]	46,000	350	59	69	34	42	41	40	39	21	38	54	35
Beryllium	470	14	0.30 U	0.58	0.28 U	0.48 J	0.36	0.59	0.62 J	0.31 U	0.35	0.29	0.35 J
Cadmium[a]	210	2.5	0.30 U	0.36 U	0.28 U	0.30 U	0.31 U	0.31 U	0.30 U	0.31 U	0.30 U	0.29 U	0.45
Calcium	NS	NS	1,400	2,800	210	370	870	1,000	1,000	380	1,300	1,000	760
Chromium	NS*	NS**	6.7	7.5	2.4	5.8	5.7	7.2	6.9	3.4	6.8	8.1	5.1
Cobalt	70	NS	6.2	9.0	1.9 U	7.4	5.3	7.2	6.5	2.1 U	5.7	6.9	5.7
Copper	9,400	270	11	17	28	48	9.3	17	17	32	34	13	8.3
Iron	160,000	NS	13,000	11,000	4,800	13,000	12,000	11,000	11,000	7,600	13,000	14,000	8,700
Lead	400	400	33	310	11,000	350	88	330	340	1,600	150	51	53
Magnesium	NS	NS	2,500	1,800	520	1,200	1,600	1,700	1,700	540	1,400	2,400	1,500
Manganese[a]	5,500	2,000	480	500	73	330	480	320	290	110	290	550	250
Nickel	4,600	140	12	12	2.9	9.1	9.4	12	11	3.1	12	14	8.4
Potassium	NS	NS	500	480 K	690	380 K	370 K	410 K	410 K	690	430 K	370 K	330
Selenium	1,200	36	2.0 U	2.4 U	1.9 U	2.0 U	2.0 U	2.1 U	2.0 U	2.1 U	2.0 U	1.9 U	2.1 U
Silver	1,200	36	0.56	0.63	13	0.73	0.61	0.58	0.55	1.2	0.70	0.48 U	0.53 U
Sodium	NS	NS	99 U	120 U	95 U	99 U	100 U	100 U	100 U	100 U	98 U	96 U	110 U
Thallium	2.3	NS	2.0 U	2.4 U	1.9 U	2.0 U	2.0 U	2.1 U	2.0 U	2.1 U	2.0 U	1.9 U	2.1 U
Vanadium	1,200	NS	7.1	11	2.7	8.9	6.8	8.4	8.5	3.2	10	8.2	6.1
Zinc	70,000	2,200	46	170	77	230	69	200	200	120	94	82	96

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016)
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO: For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 5: Validated Soil Analytical Results - TAL Metals Summary Table
Wurtsboro Lead Mine Site
Mamakating, Sullivan County, New York
May 16 through 18, 2016

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	P001-SED39-0002-01	P001-SED39-0612-01	P001-SEN38-0002-01	P001-SEN38-0612-01	P001-SEN39-0002-01	P001-SEN39-0612-01	P001-SEX38-0002-01	P001-SEX38-0612-01	P001-SEX39-0002-01	P001-SEX39-0612-01	RB-160516
Sampling Date			5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/17/2016	5/16/2016
Sample Depth (Inches)			0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	0-2	6-12	NA
Sample Matrix			Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	DI Water
TAL Metal													
Aluminum	230,000	NS	2,600	7,000	5,400	4,400	5,200	5,300	9,000	7,100	8,000	8,600	100 U
Antimony	94	NS	2.3 U	2.2 U	2.1 U	2.0 U	2.1 U	2.0 U	2.6 U	2.2 U	2.0 U	2.0 U	20 U
Arsenic[a]	68	16	4.4	4.9	4.1	3.2	3.7	5.4	9.9	5.5	5.6	6.0	8.0 U
Barium[a]	46,000	350	25	49	29	31	44	37	110	75	40	43	100 U
Beryllium	470	14	0.34 U	2.4	0.32 U	0.30 U	0.32 J	0.29	0.39 U	0.38	0.39	0.29 U	3.0 U
Cadmium[a]	210	2.5	0.34 U	0.41	0.32 U	0.30 U	0.36	0.65	0.39 U	0.39	0.30 U	0.29 U	3.0 U
Calcium	NS	NS	990	1,700	690	640	1,000	920	2,300	21,000	510 K	560 K	500 U
Chromium	NS*	NS**	4.1	11	5.6	5.2	8.0	7.7	11	13	11	9.5	5.0 U
Cobalt	70	NS	2.9	25	5.3	4.6	5.9	6.4	11	7.3	8.1	5.7	20 U
Copper	9,400	270	23	49	11	6.0	21	61	14	17	18	12	10 U
Iron	160,000	NS	7,800	18,000	12,000	10,000	12,000	13,000	20,000	14,000	18,000	16,000	50 U
Lead	400	400	770	1,800	11	32	360	1,300	50	88	55	16	8.0 U
Magnesium	NS	NS	940	1,600	2,000	1,600	1,900	1,700	2,800	3,900	2,400	2,100	500 U
Manganese[a]	5,500	2,000	140	390	420	470	390	340	1500	770	570	610	5.0 U
Nickel	4,600	140	5.9	12	8.6	7.3	12	12	18	17	18	13	20 U
Potassium	NS	NS	450	810	380	370	320	350	490	440	380	250	500 U
Selenium	1,200	36	2.3 U	2.2 U	2.1 U	2.0 U	2.1 U	2.0 U	2.6 U	2.2 U	2.0 U	2.0 U	20 U
Silver	1,200	36	0.70	0.63	0.66	0.58	0.60	0.85	0.90	0.65	0.62	0.64	5.0 U
Sodium	NS	NS	110 U	110 U	110 U	100 U	100 U	98 U	130 U	110 U	99 U	98 U	1,000 U
Thallium	2.3	NS	2.3 U	2.2 U	2.1 U	2.0 U	2.1 U	2.0 U	2.6 U	2.2 U	2.0 U	2.0 U	20 U
Vanadium	1,200	NS	4.2	16	6.9	7.6	8.0	9.6	13	11	12	13	20 U
Zinc	70,000	2,200	150	460	39 K	68	250	480	110	140	85	46 K	20 U

RST 3 Sample No.	EPA RMLs for Residential Soil[1]	NYSDEC RUSCO[2]	RB-160517	RB-160518
Sampling Date			5/17/2016	5/18/2016
Sample Depth (Inches)			NA	NA
Sample Matrix			DI Water	DI Water
TAL Metal				
Aluminum	230,000	NS	100 U	100 U
Antimony	94	NS	20 U	20 U
Arsenic[a]	68	16	8.0 U	8.0 U
Barium[a]	46,000	350	100 U	100 U
Beryllium	470	14	3.0 U	3.0 U
Cadmium[a]	210	2.5	3.0 U	3.0 U
Calcium	NS	NS	500 U	500 U
Chromium	NS*	NS**	5.0 U	5.0 U
Cobalt	70	NS	20 U	20 U
Copper	9,400	270	10 U	10 U
Iron	160,000	NS	50 U	50 U
Lead	400	400	8.0 U	8.0 U
Magnesium	NS	NS	500 U	500 U
Manganese[a]	5,500	2,000	5.0 U	5.0 U
Nickel	4,600	140	20 U	20 U
Potassium	NS	NS	500 U	500 U
Selenium	1,200	36	20 U	20 U
Silver	1,200	36	5.0 U	5.0 U
Sodium	NS	NS	1000 U	1000 U
Thallium	2.3	NS	20 U	20 U
Vanadium	1,200	NS	20 U	20 U
Zinc	70,000	2,200	20 U	20 U

Notes:
RST 3 - Removal Support Team 3
TAL - Target Analyte List
J - Indicates the reported value is an estimate
K - Indicates the reported value may be biased high
L - Indicates the reported value may be biased low
U - Indicates the analyte was not detected at or above the Reporting Limit
NS - Not specified No. - Number
[1]EPA RMLs - U.S. Environmental Protection Agency Removal Management Levels for Residential Soil corresponds to either a 10^{-6} risk level for carcinogens or a hazard quotient (HQ) of 3 for non-carcinogens (published May 2016).
[2]NYSDEC RUSCOs - New York State Department of Environmental Conservation Residential Use Soil Cleanup Objectives (published December 14, 2006)
All soil analytical results, EPA RMLs, and NYSDEC RUSCOs are reported in milligrams per kilogram (mg/kg)
*No specified EPA RML for total chromium. EPA RMLs for Residential Soil are 350,000 mg/kg for trivalent chromium and 30 mg/kg for hexavalent chromium
**No specified NYSDEC RUSCO for total chromium. NYSDEC Remedial Program SCOs for Residential Soil are 36 mg/kg for trivalent chromium and 22 mg/kg for hexavalent chromium
[a]NYSDEC RUSCO. For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO for this use of the site
Values highlighted in yellow equal or exceed the respective NYSDEC RUSCO for Residential Soil
Values in red equal or exceed the respective EPA RML for Residential Soil
Values in red and highlighted in yellow equal or exceed both the NYSDEC RUSCO and EPA RML for Residential Soil

Table 6: Validated Soil Analytical Results - TCLP Metals Summary Table
Wurtsboro Lead Mine Assessment Site
Mamakating, Sullivan County, New York
November 10 through 12 and December 10, 2015

RST 3 Sample No.	EPA TCLP Maximum Contaminant Concentration (mg/L)	P001-TP001-T1-01	P001-TP001-T2-01	P001-TP002-T1-01	P001-TP003-T1-01	P001-TP004-T1-01	P001-TP004-T1-02	P001-WC001-01
Sampling Date		11/12/2015	11/12/2015	11/12/2015	11/12/2015	11/10/2015	11/10/2015	11/11/2015
Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil
TCLP Metal								
Arsenic	5.0	ND	ND	ND	ND	ND	ND	ND
Barium	100.0	ND	ND	ND	ND	ND	ND	ND
Cadmium	1.0	ND	ND	ND	ND	ND	ND	0.030
Chromium	5.0	ND	ND	ND	ND	ND	ND	ND
Lead	5.0	**180**	**140**	**140**	**40**	**36**	**31**	**130**
Mercury	0.2	0.002	0.002	ND	ND	ND	ND	ND
Selenium	1.0	ND	ND	ND	ND	ND	ND	ND
Silver	5.0	ND	ND	ND	ND	ND	ND	ND

RST 3 Sample No.	EPA TCLP Maximum Contaminant Concentration (mg/L)	P001-WC002-01	P001-WCCD43-0036-01	P001-WCCL43-0036-01	P001-WCDF43-0024-01	P001-WCDO43-0036-01	P001-WCDO43-0036-02
Sampling Date		11/11/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015	12/10/2015
Sample Matrix		Soil	Soil	Soil	Soil	Soil	Soil
TCLP Metal							
Arsenic	5.0	ND	ND	ND	ND	ND	ND
Barium	100.0	ND	ND	ND	ND	ND	ND
Cadmium	1.0	ND	ND	ND	ND	ND	ND
Chromium	5.0	ND	ND	ND	ND	ND	ND
Lead	5.0	**130**	**8.0**	1.7	**8.0**	0.32	0.27
Mercury	0.2	ND	NA	NA	NA	NA	NA
Selenium	1.0	ND	ND	ND	ND	ND	ND
Silver	5.0	ND	ND	ND	ND	ND	ND

Notes:

RST 3 - Removal Support Team 3

TCLP - Toxicity Characteristic Leaching Procedure

No. - Number, ND - Non-detect, NA - Not Applicable

All U.S. Environmental Protection Agency (EPA) TCLP maximum contaminant concentrations and analytical results reported in milligrams per liter (mg/L)

Values in red exceed the EPA TCLP maximum contaminant concentrations, which were obtained from EPA's Hazardous Waste Characteristics, October 2009